THE

ARCHITECTURAL MAGAZINE,

AND

JOURNAL

OF IMPROVEMENT IN

ARCHITECTURE, BUILDING, AND FURNISHING,

AND IN THE VARIOUS ARTS AND TRADES
CONNECTED THEREWITH.

CONDUCTED BY J. C. LOUDON, F.L.S. H.S. &c.

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AND FURNITURE.

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PREFACE.

WITH this Fifth Volume of the *Architectural Magazine*, the work is brought to a close; a circumstance which would occasion its Conductor much more regret than it does, were it not for the following reasons: —

The great object of the *Architectural Magazine* has been, to render the subject of Architecture familiar to the general reader; or, in other words, to give it popularity. Accordingly, the volumes already published embrace every department of Architecture, both as an Art of Design and Taste, and as an Art of Construction; they may be considered as including a popular view of all the leading features of Architecture and Building. The work, therefore, in its present limited extent, is more likely to be extensively read, than if it had been carried on to an indefinite number of volumes.

The *Architectural Magazine* consists of a collection of papers, the object of which is to render Architecture familiar to the general reader; and, by this means, to diffuse such a knowledge of the subject, both as an Art of Design and Taste, and as one of Construction, as shall form a solid foundation for the progress of architectural improvement. Every accession of knowledge is an increase of enjoyment; and, by instructing the eye in the exterior forms and ornaments of buildings, and in the materials and principles of their construction, a new source of pleasure will be opened up. Besides this, a more intimate knowledge of Architecture and Furniture will not only produce increased domestic comforts, by enabling all householders to detect defective arrangements, imperfections of construction, and inefficient modes of lighting, warming, and ventilating, but will enable them to perceive where improvements may be best made in the department of fitting up and furnishing.

The progress of architectural improvement no doubt depends in some degree on the progress which architects make in the knowledge of their art; but it depends much more on an increase of architectural taste on the part of the public. As long as the public are comparatively ignorant of what is required for the comfort of their own dwellings, so long will they be unable to distinguish between architects of inferior skill, and those who possess a competent knowledge of their profession; but as soon as the taste of the public has been cultivated, and householders have obtained a sufficient knowledge of the subject to enable them to detect faults, and to feel the advantages of good methods of arrangement and construction, then architects will be compelled to study to suit the wishes of their employers. Hence, to enlighten the public generally with regard to Architecture, and the arts immediately connected with it, has been the great object of the *Architectural Magazine*. The *Encyclopædia of Cottage, Farm, and Villa Architecture and Furniture*, was undertaken with a view to the same end; and to that work the *Architectural Magazine* may be considered as the sequel; bringing down the progress of architectural improvement to the year 1839.

Bayswater, Dec. 21. 1838. J. C. L.

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THE

ARCHITECTURAL MAGAZINE.

JANUARY, 1838.

ORIGINAL COMMUNICATIONS.

ART. I. *Remarks on the present State of Architecture in Britain, and on the Institute of British Architects.* By a PROVINCIAL ARCHITECT.

THE times in which we live, as regards the internal construction and advance of society, are, perhaps, the most remarkable in the history of the human race. By-gone ages may have been more fertile in those incidents on which historians love to dilate; the march of conquerors, the change of dynasties, the vicissitudes of coronets, and the fate of crowns; but in this period the very elements of society are in motion, the fountains of the deep are breaking up, and out of its chaos new combinations are continually taking place, presenting new aspects, changing, as in a moment, the current of our ideas, and sweeping away the accumulated prejudices of centuries. Every subject to which the human mind has been directed partakes of this onward movement: the sciences of legislation, political economy, chemistry, mechanics, geology; every study, in short, which tends to enlarge the boundaries of human knowledge, to extend man's dominion over the material elements, and consequently to increase his comforts and enjoyments; all these have made, and are making, every year prodigious advances.

The science of architecture has, at last (tardily enough, it must be owned), caught something of the general impulse, which, indeed, it was scarcely possible to avoid, without being swamped by the advancing tide of popular opinion: the attention of the architectural world has been aroused to the necessity for keeping pace with the progress of knowledge in other departments, and it has been admitted on all hands that something must be done. What that something should be, however, seemed a matter of some difficulty and doubt. The first thing naturally required was to excite an interest in the public mind, and more especially amongst those connected with the art; to stimulate a thirst for improvement, and awaken dormant capabilities wherever they might be found: the second step would be consequent upon the other, to concentrate the energies so excited, and direct them by the simplest means to the accomplishment of the most desir-

able ends. In respect to the first of these desiderata, a great point was gained when it was demonstrated by yourself, in the publication of your *Encyclopædia of Cottage, Farm, and Villa Architecture*, that architectural works are not necessarily either expensive or full of technicalities; that these two obstacles in the way of the general diffusion of sound principles of taste may be avoided to a very great extent by care and attention. The establishment of this Magazine, also, by circulating information of the proceedings in the architectural world (a region, up to that period, veiled in as much obscurity as the sources of the Nile, or the kingdom of Timbuctoo), and by exciting discussion on the various subjects connected with design and construction, did much to remove the difficulties in the way of progressive improvement. Something, however, was still wanting. The desultory and unaided efforts of individuals, however talented and zealous, in any cause, can never produce the effect of a well-organised simultaneous combination of exertion. A guiding and directing power was required to unite the desultory energies, to marshal the scattered forces; and, by a well-directed division of labour, united with the most extensive combination of efforts, to produce similar effects to those which have so happily resulted in other arts and sciences.

Apparently with views something similar to these, the Institute of British Architects was called into existence. Earl De Grey, at the opening meeting, remarked that "This Society is formed for the cultivation of an art which can only be understood and appreciated by those who make it their study." It must, therefore, follow, that the greater the number of individuals who can be induced "to make it their study," the more will the art "be understood and appreciated." After mentioning in detail some of the benefits expected to result from the establishment of the Society, the noble lord goes on so say, "If we can only succeed in establishing this institution on the *broad ground and footing* which I think we may, then we shall have an apportunity of deriving a greater acquaintance with the resources of the art." In the address prefixed to the published part of the *Transactions*, it is stated that, "the general objects of the institution are, in few words, the promotion and encouragement of the art and science which the founders profess, by all the means in their power." It is also stated that, "without aid beyond the circle of its professional members, it will at first, perhaps, be difficult to carry such a society into full effect." The passages here quoted would appear to indicate that the combination of efforts above alluded to in one common pursuit, the advancement of architectural science, was the leading principle of the Association; and that such was the only object of its original founders I have very little doubt. It is therefore much to be regretted that anything like an exclusive spirit should have crept in; and that, in attempting to carry out an object so desirable, regulations

should have been adopted at all fettering its usefulness, and forbidding the active cooperation of any persons able and willing to contribute materially to its success. I allude more particularly to the 21st clause of Section 4. of the By-Laws, which renders ineligible, or liable to expulsion, any fellow or associate "for having engaged since his election in the measurement or valuation of any works undertaken by any building artificer, except such as are proposed to be executed under the member's own designs or directions, or for the receipt or acceptance of any pecuniary consideration or emolument from any builder whose works he may have been engaged to superintend," &c. If this be the "broad ground and footing" alluded to by Earl De Grey, His Lordship's notions of breadth must be rather peculiar; for it is scarcely possible to imagine a narrower or more exclusive base on which to found a society. However, laying aside all disputes as to the breadth of the base, this Society has now been established two years and a half, the wealthy and noble of the land are enrolled amongst its honorary members; Eastern potentates have not disdained to shed upon it the lustre of their magnificence; royalty itself has put the seal of its sanction to the proceedings by the charter of incorporation; and yet, notwithstanding all these advantages, in spite of the distinguished position the Society has attained, the last report is obliged to confess that "it is matter of regret that the lectures (delivered by first-rate professors on most interesting subjects) did not command a larger number of auditors." Again, "The subjects proposed for prize essays not having been successful, it is to be hoped that they will, at some future opportunity, be productive of happier results," &c. How is this? How comes it to pass that, with all these advantages and inducements to the study of their art, the junior members of the profession will neither attend the lectures, nor enter into competition for the prizes held out to their acceptance? The true answer is, the system is too exclusive:—

> "Non tali auxilio, nec defensoribus istis
> Tempus eget."

The stirring times in which we live demand something of a more diffusive and expansive character. If the tree is to bear fruit at all, it must be planted in soil sufficiently deep; its roots must have liberty to shoot out and extract nourishment from every source, which, distilled and elaborated by the parent trunk, may expand into hardy health, vigour, and fruitfulness. Cribbed, cabined, and confined, without depth of earth, or room for expansion, it will exhibit, at best, but a stunted and sickly growth; a feeble exotic, which the first rude blast will level with the dust.

But, to drop metaphor, I propose to show, in the following

pages, that the present exclusive system of the Institute is unjust in principle, impolitic in practice, and that it never can realise the expectations of its founders.

In establishing an association of persons engaged in one common pursuit, either of two principles may be adopted: it may be a society purely for the advancement of art, without reference to the private interests of the members, or it may be an association for the protection of the interests of a profession, or, in other words, a trade union. I have no objection to a society formed on either of these principles; but I think a little consideration will show that their union in one society is incompatible. The one knows no test but that of merit, and no distinction but the various degrees of zeal in the advancement of science; the other jealously fences itself round with arbitrary restrictions and enactments; treats as intruders and poachers on its own preserve those whose shibboleth of technicalities differs from its own: and would rather the cause of science stood still, except its own particular clique could be at the head. The Institute is professedly established on the first of these principles: it claims the support and confidence of the public as a purely scientific association, which confidence it attempts to convert, by its restrictive enactments, into a source of private advantage. Indeed, this is unwittingly allowed to escape in the first address, where it is stated, that one object of the Institute is that "of gaining at the hands of the public a reliance on those professors who are *bonâ fide* architects;" that is, in other words, that no practising architect is worthy of being trusted who is not a member of the Institute. This, if the Institute were open to all who are eligible on the score of merit, could hardly be complained of, though it must be a "broad ground" indeed which would justify the proposition; but, on its present foundation, to assume that all talent and merit, either now or at any future time, would centre in the Institute, is neither more nor less than a fraud upon the public.

Again, architecture is the science of construction; an architect, therefore, is not merely a person capable of sketching a design, or of finishing a showy drawing; but the chief builder, as the word implies; one capable of entering into all the details of every branch of artificer's work, of understanding the prices of each, and the method of putting together. I need not inform the practical architect how much design and ornament depend upon the material and construction employed; and, as to prices and value, it is notorious that the architects of the present day are lamentably deficient in practical knowledge on these subjects; so much so, that the discrepancy between the architect's estimate and the real cost of a building has become proverbial. Now, where is the student to obtain a competent knowledge on these points? The time usually spent in an architect's office is little

enough to gain a general acquaintance with the principles of design; and, if a young man is desirous to obtain a practical knowledge of the various modes of construction adopted, and of prices and value of work, it can only be acquired by measuring and surveying. To affix a stigma, therefore, on a branch of knowledge quite as essential to the thorough architect as any other, has a direct tendency to cause it to be undervalued by the student, as unworthy of attention, and derogatory to his professional character, and is both absurd and unjust.

But, again, the principal object the Institute professes is the "facilitating the acquirement of architectural knowledge." Now, to whom does it offer these facilities? To the young practitioner of limited means, to whom advantages of this kind would be acceptable? Does is tend to draw merit from obscurity, and lend its helping hand to foster genius wherever it may be found? No such thing: it offers its "facilities" to two classes; to the architect in the bustle and activity of full practice, to whom they are unnecessary, and to the young professor, whose means enable him to wait with patience until the tide of public approbation shall set in his favour. But, supposing the case of a young enthusiast, whose love for the art has enabled him to force his way through difficulties and obstacles, and who, whilst maturing his talents for public competition, is honourably maintaining himself in the only way open to him, that of measuring and surveying; to him the door of admission is bolted and barred; the cold supercilious glance of contempt is cast on his exertions; should he fail, no helping hand of assistance is stretched out to him; and should he succeed, the success is all his own. To call such a society an institution for "facilitating the acquirement of architectural knowledge," is a burlesque and a mockery.

I could go into this part of the subject at much greater length; I might put it to the candour and conscience of the fellows themselves, whether this regulation is uniformly put in force; I might ask whether the donation of twenty-five guineas (which amount admits an honorary member to all the real privileges of the Society) is more likely to promote the progress of architectural knowledge than the admission of their *half*-brethren in the profession; but I forbear, at least for the present, and proceed to offer a few words on the impolicy of the restrictions.

Scarcely can any publication, at all treating on architecture, be taken up, but it is either full of lamentations on the low state of the art in this country, or, if written by an architect, it is filled with loud and deep complaints of the want of taste in the public, and of opportunities for the display of architectural skill. Both these complaints originate in the same source, the want of sympathetic taste and common feeling between the

public, who are the employers, and the professors, who are the *employés.* This diversity of feeling can only be removed by the principles of correct taste being diffused as extensively as possible; in the first instance, embracing all in any way connected with the art, and, through them, being extended to the public. If it be not thus, it will be in vain for those who consider themselves first-rate professors of the art to expect admiration for the fruits of their talents exhibited to the public. They will still be "*caviare* to the multitude;" and, even amongst the architects themselves, the same carping hypercriticism which at present prevails will still be perpetuated; but once let the same common principles of taste obtain currency in the public mind, and talent will only need to be displayed to be fully appreciated; that narrow sectarian jealousy, which would rather lower others to its own standard, than elevate itself to theirs, would produce no effect, for there would not exist the ignorance and prejudice to which it could appeal. I maintain, therefore, that it is for the interest of the architects *par excellence* to throw open their doors as wide as possible. Besides, there is at the present day a great degree of suspicion attached to every thing exclusive. It is a common adage, that, where there is mystery and exclusion there must be something wrong; and it is natural to question if a society, which can only exist by means of arbitrary distinctions, is worthy of public support at all. Whether it is for the interests of the Institute that it should be exposed to these imputations, I presume not to determine.

The history of architecture offers a remarkable exception to that of the other arts and sciences. Their advance has been, with occasional vicissitudes, gradual and progressive; but architecture, in this respect, affords a singular anomaly. From the twelfth to the fifteenth century, this art was elevated as much above the level of the other sciences of the day, as it has since been depressed below them. This is a fact which cannot be denied, for splendid testimonies to its truth surround us on every side. Tell me not that the cause of this difference was merely the superior encouragement given at that period to the art. If encouragement means lavish expenditure, Buckingham Palace might have far outshone the Parthenon in beauty, and Trafalgar Square have surpassed the Acropolis of Athens in splendour. No: it was the combination, the union of energy, the oneness of feeling, diffused through all connected, however humbly, with the art, which produced such splendid results. The architect and the artisan were then merely links at opposite extremities of a mighty chain, by which all interested in the science were bound together, and through every part of which successive improvements extended with the rapidity of an electric current. I am not visionary enough to suppose that institutions suited to another

state of society could be transplanted, without modification, to the present day; but I am convinced that, before such a result can be produced as will tell with effect on the architectural science of the country, there must be a much closer approximation to them than is exhibited in the Institute of British Architects.

I write these remarks with no unfriendly feelings towards the Institute. I have read, with much pleasure, their published *Transactions*, and the writings of different members of the body*; and I am free to admit that it may be considered, to some extent, as comprising the *élite* of the profession. Personally, I have nothing to hope or fear from either admission to, or exclusion from, the Society: I have never applied for admission, and, in all probability, never shall. I will not, however, yield in attachment to the art to any; and it is purely with this motive that I have now taken up my pen to animadvert on what appears to me a false principle. The Society has been so accustomed to the language of flattery, that it may, perhaps, appear that "I am become their enemy, because I tell them the truth;" nevertheless, I will venture to close with a plain and candid opinion, that, whilst the present exclusive system is continued, their *soirées* may be crowded with the fashionable, the wealthy, and the gay; they may bask in the smiles of princes, and breathe the intoxicating atmosphere of courts; but, as a society, mediocrity will be their goal, and, in respect to the profession, they will never be anything more than "a miserable monopolising minority."

November 16. 1837.

ART. II. *The Poetry of Architecture.* By KATA PHUSIN.

No. 2. THE COTTAGE — continued.

II. *The Lowland Cottage. — Italy.*

"Most musical, most melancholy."

LET it not be thought that we are unnecessarily detaining our readers from the proposed subject, if we premise a few remarks on the character of the landscape of the country we have now entered. It will always be necessary to obtain some definite knowledge of the distinctive features of a country, before we can form a just estimate of the beauties or the errors of its architecture. We wish our readers to imbue themselves as far as may be with the spirit of the clime which we are now entering;

* I cannot help here mentioning the name of Mr. G. Godwin, Jun., as having done much to rescue the literary character of the profession from obloquy, and expressing a hope that he will go forward in the path he has chosen. Had the Institute never done anything else than develope the talents of this young gentleman, it would not have existed in vain.

to cast away all general ideas; to look only for unison of feeling, and to pronounce every thing wrong which is contrary to the *humours* of nature. We must make them feel where they are; we must throw a peculiar light and colour over their imaginations; then we will bring their judgment into play, for then it will be capable of just operation.

We have passed, it must be observed (in leaving England and France for Italy), from comfort to desolation; from excitement, to sadness: we have left one country prosperous in its prime, and another frivolous in its age, for one glorious in its death.

Now, we have prefixed the hackneyed line of Il Penseroso to our paper, because it is a definition of the essence of the beautiful. What is most musical, will always be found most melancholy; and no real beauty can be obtained without a touch of sadness. Whenever the beautiful loses its melancholy, it degenerates into prettiness. We appeal to the memories of all our observing readers, whether they have treasured up any scene, pretending to be more than pretty, which has not about it either a tinge of melancholy or a sense of danger: the one constitutes the beautiful, the other the sublime.

This postulate being granted, as we are sure it will by most (and we beg to assure those who are refractory or argumentative, that, were this a treatise on the sublime and beautiful, we could convince and quell their incredulity to their entire satisfaction by innumerable instances), we proceed to remark here, once for all, that the principal glory of the Italian landscape is its extreme melancholy. It is fitting that it should be so: the dead are the nations of Italy; her name and her strength are dwelling with the pale nations underneath the earth; the chief and chosen boast of her utmost pride is the *hic jacet;* she is but one wide sepulchre, and all her present life is like a shadow or a memory. And, therefore, or, rather, by a most beautiful coincidence, her national tree is the cypress; and whoever has marked the peculiar character which these noble shadowy spires can give to her landscape, lifting their majestic troops of waving darkness from beside the fallen column, or out of the midst of the silence of the shadowed temple and worshipless shrine, seen far and wide over the blue of the faint plain, without loving the dark trees for their sympathy with the sadness of Italy's sweet cemetery shore, is one who profanes her soil with his footsteps. Every part of the landscape is in unison; the same glory of mourning is thrown over the whole; the deep blue of the heavens is mingled with that of the everlasting hills, or melted away into the silence of the sapphire sea; the pale cities, temple and tower, lie gleaming along the champaign; but how calmly! no hum of men; no motion of multitude in the midst of them: they are voiceless as the city of ashes. The transparent air is gentle among the blossoms of the orange and the dim leaves of the

olive; and the small fountains, which, in any other land, would spring merrily along, sparkling and singing among tinkling pebbles, here flow calmly and silently into some pale font of marble, all beautiful with life, worked by some unknown hand, long ago nerveless, and fall and pass on among wan flowers, and scented copse, through cool leaf-lighted caves or grey Egerian grottos, to join the Tiber or Eridanus, to swell the waves of Nemi, or the Larian Lake. The most minute objects (leaf, flower, and stone), while they add to the beauty, seem to share in the sadness, of the whole.

But, if one principal character of Italian landscape is melancholy, another is elevation. We have no simple rusticity of scene, no cowslip and buttercup humility of seclusion. Tall mulberry trees, with festoons of the luxuriant vine, purple with ponderous clusters, trailed and trellised between and over them, shade the wide fields of stately Indian corn; luxuriance of lofty vegetation (catalpa, and aloe, and olive), ranging itself in lines of massy light along the wan champaign, guides the eye away to the unfailing wall of mountain, Alp or Apennine; no cold long range of shivery grey, but dazzling light of snow, or undulating breadth of blue, fainter and darker in infinite variety; peak, precipice, and promontory passing away into the wooded hills, each with its tower or white village sloping into the plain; castellated battlements cresting their undulations; some wide majestic river gliding along the champaign, the bridge on its breast and the city on its shore; the whole canopied with cloudless azure, basking in mistless sunshine, breathing the silence of odoriferous air. Now comes the question. In a country of this pomp of natural glory, tempered with melancholy memory of departed pride, what are we to wish for, what are we naturally to expect, in the character of her most humble edifices; those which are most connected with present life, least with the past? What are we to consider fitting or beautiful in her cottage?

We do not expect it to be comfortable, when every thing around it betokens decay and desolation in the works of man. We do not wish it to be neat, where nature is most beautiful, because neglected. But we naturally look for an elevation of character, a richness of design or form, which, while the building is kept a cottage, may yet give it a peculiar air of cottage aristocracy; a beauty (no matter how dilapidated) which may appear to have been once fitted for the surrounding splendour of scene and climate. Now, let us fancy an Italian cottage before us. The reader who has travelled in Italy will find little difficulty in recalling one to his memory, with its broad lines of light and shadow, and its strange, but not unpleasing mixture of grandeur and desolation. Let us examine its details, enumerate its architectural peculiarities, and see how far it agrees with our preconceived idea of what the cottage ought to be?

The first remarkable point of the building is the roof. It generally consists of tiles of very deep curvature, which rib it into distinct vertical lines, giving it a far more agreeable surface than that of our flatter tiling. The *form* of the roof, however, is always excessively flat, so as never to let it intrude upon the eye; and the consequence is, that, while an English village, seen at a distance, appears all red roof, the Italian is all white wall; and, therefore, though always bright, is never gaudy. We have in these roofs an excellent example of what should always be kept in mind, that every thing will be found beautiful, which climate or situation render useful. The strong and constant heat of the Italian sun would be intolerable if admitted at the windows; and, therefore, the edges of the roof project far over the walls, and throw long shadows downwards, so as to keep the upper windows constantly cool. These long oblique shadows on the white surface are always delightful, and are alone sufficient to give the building character. They are peculiar to the buildings of Spain and Italy; for, owing to the general darker colour of those of more northerly climates, the shadows of their roofs, however far thrown, do not tell distinctly, and render them, not varied, but gloomy. Another ornamental use of these shadows is, that they break the line of junction of the wall with the roof: a point always desirable, and in every kind of building, whether we have to do with lead, slate, tile, or thatch, one of extreme difficulty. This object is farther forwarded in the Italian cottage, by putting two or three windows up under the very eaves themselves, which is also done for coolness, so that their tops are formed by the roof; and the wall has the appearance of having been terminated by large battlements, and roofed over. And, finally, the eaves are seldom kept long on the same level: double or treble rows of tiling are introduced; long sticks and irregular woodwork are occasionally attached to them, to assist the festoons of the vine; and the graceful irregularity and marked character of the whole; must be dwelt on with equal delight by the eye of the poet, the artist, or the unprejudiced architect. All, however, is exceedingly humble; we have not yet met with the elevation of character we expected. We shall find it, however, as we proceed.

The next point of interest is the window. The modern Italian is completely owl-like in his habits. All the day-time, he lies idle and inert; but during the night he is all activity: but it is mere activity of inoccupation. Idleness, partly induced by the temperature of the climate, and partly consequent on the decaying prosperity of the nation, leaves indications of its influence on all his undertakings. He prefers patching up a ruin to building a house; he raises shops and hovels, the abodes of inactive, vegetating, brutish poverty, under the protection of the aged and

ruined, yet stalwart, arches of the Roman amphitheatre; and the habitations of the lower orders frequently present traces of ornament and stability of material evidently belonging to the remains of a prouder edifice. This is the case sometimes to such a degree as, in another country, would be disagreeable from its impropriety; but, in Italy, it corresponds with the general prominence of the features of a past age, and is always beautiful. Thus, the eye rests with delight on the broken mouldings of the windows, and the sculptured capitals of the corner columns, contrasted, as they are, the one with the glassless blackness within, the other with the ragged and dirty confusion of drapery around. The Italian window, in general, is a mere hole in the thick wall, always well proportioned; occasionally arched at the top, sometimes with the addition of a little rich ornament; seldom, if ever, having any casement or glass, but filled up with any bit of striped or coloured cloth, which may have the slightest chance of deceiving the distant observer into the belief that it is a legitimate blind. This keeps off the sun, and allows a free circulation of air, which is the great object. When it is absent, the window becomes a mere black hole, having much the same relation to a glazed window that the hollow of a skull has to a bright eye; not unexpressive, but frowning and ghastly, and giving a disagreeable impression of utter emptiness and desolation within. Yet there is character in them: the black dots tell agreeably on the walls at a distance, and have no disagreeable sparkle to disturb the repose of surrounding scenery. Besides, the temperature renders every thing agreeable to the eye, which gives it an idea of ventilation. A few roughly constructed balconies, projecting from detached windows, usually break the uniformity of the wall. In some Italian cottages there are wooden galleries, resembling those so frequently seen in Switzerland; but this is not a very general character, except in the mountain valleys of North Italy, although sometimes a passage is effected from one projecting portion of a house to another by means of an exterior gallery. These are very delightful objects; and, when shaded by luxuriant vines, which is frequently the case, impart a gracefulness to the building otherwise unattainable.

The next striking point is the arcade at the base of the building. This is general in cities; and, though frequently wanting to the cottage, is present often enough to render it an important feature. In fact, the Italian cottage is usually found in groups. Isolated buildings are rare; and the arcade affords an agreeable, if not necessary, shade in passing from one building to another. It is a still more unfailing feature of the Swiss city, where it is useful in deep snow. But the supports of the arches in Switzerland are generally square masses of wall, varying in size, separating the arches by irregular intervals, and sustained by broad

and massy buttresses; while, in Italy, the arches generally rest on legitimate columns, varying in height from one and a half to four diameters, with huge capitals, not unfrequently rich in detail. These give great gracefulness to the buildings in groups: they will be spoken of more at large when we are treating of arrangement and situation.

The square tower, rising over the roof of the farther cottage, will not escape observation. It has been allowed to remain, not because such elevated buildings ever belong to mere cottages, but, first, that the truth of the scene might not be destroyed; and, secondly, because it is impossible, or nearly so, to obtain a group of buildings of any sort, in Italy, without one or more such objects rising behind them, beautifully contributing to destroy the monotony, and contrast with the horizontal lines of the flat roofs and square walls. We think it right, therefore, to give the cottage the relief and contrast which, in reality, it possessed, even though we are at present speaking of it in the abstract.

Having now reviewed the distinctive parts of the Italian cottage in detail, we shall proceed to direct our attention to points of general character. 1. Simplicity of form. The roof, being flat, allows of no projecting garret windows, no fantastic gable ends: the walls themselves are equally flat; no bow-windows or sculptured oriels, such as we meet with perpetually in Germany, France, or the Netherlands, vary their white fronts. Now, this simplicity is, perhaps, the principal attribute by which the Italian cottage attains the elevation of character we desired and expected. All that is fantastic in form, or frivolous in detail, annihilates the aristocratic air of a building: it at once destroys its sublimity and size, besides awakening, as is almost always the case, associations of a mean and low character. The moment we see a gable roof, we think of cocklofts; the instant we observe a projecting window, of attics and tent-bedsteads. Now, the Italian cottage assumes, with the simplicity, *l'air noble* of buildings of a higher order; and, though it avoids all ridiculous miniature mimicry of the palace, it discards the humbler attributes of the cottage. The ornament it assumes is dignified: no grinning faces, or unmeaning notched planks, but well-proportioned arches, or tastefully sculptured columns. While there is nothing about it unsuited to the humility of its inhabitant, there is a general dignity in its air, which harmonises beautifully with the nobility of the neighbouring edifices, or the glory of the surrounding scenery.

2. Brightness of effect. There are no weather stains on the walls; there is no dampness in air or earth, by which they could be induced; the heat of the sun scorches away all lichens, and mosses, and mouldy vegetation. No thatch or stone crop on the roof unites the building with surrounding vegetation; all is

clear, and warm, and sharp on the eye; the more distant the building, the more generally bright it becomes, till the distant village sparkles out of the orange copse, or the cypress grove, with so much distinctness as might be thought in some degree objectionable. But it must be remembered that the prevailing colour of Italian landscape is blue; sky, hills, water, are equally azure: the olive, which forms a great proportion of the vegetation, is not green, but grey; the cypress, and its varieties, dark and neutral, and the laurel and myrtle far from bright. Now, white, which is intolerable with green, is agreeable contrasted with blue; and to this cause it must be ascribed that the white of the Italian building is not found startling or disagreeable in the landscape. That it is not, we believe, will be generally allowed.

3. Elegance of feeling. We never can prevent ourselves from imagining that we perceive, in the graceful negligence of the Italian cottage, the evidence of a taste among the lower orders refined by the glory of their land, and the beauty of its remains. We have always had strong faith in the influence of climate on the mind, and feel strongly tempted to discuss the subject at length; but our paper has already exceeded its proposed limits, and we must content ourselves with remarking what will not, we think, be disputed, that the eye, by constantly resting either on natural scenery of noble tone and character, or on the architectural remains of classical beauty, must contract a habit of feeling correctly and tastefully; the influence of which, we think, is seen in the style of edifices the most modern and the most humble.

Lastly, Dilapidation. We have just used the term "graceful negligence:" whether it be graceful, or not, is a matter of taste; but the uncomfortable and ruinous disorder and dilapidation of the Italian cottage is one of observation. The splendour of the climate requires nothing more than shade from the sun, and occasionally shelter from a violent storm: the outer arcade affords them both: it becomes the nightly lounge and daily dormitory of its inhabitant, and the interior is abandoned to filth and decay. Indolence watches the tooth of Time with careless eye and nerveless hand. Religion, or its abuse, reduces every individual of the population to utter inactivity three days out of the seven; and the habits formed in the three regulate the four. Abject poverty takes away the power, while brutish sloth weakens the will; and the filthy habits of the Italian prevent him from suffering from the state to which he is reduced. The shattered roofs, the dark, confused, ragged windows, the obscure chambers, the tattered and dirty draperies, altogether present a picture which, seen too near, is sometimes revolting to the eye, always melancholy to the mind. Yet even this many would not wish to

be otherwise. The prosperity of nations, as of individuals, is cold, and hard-hearted, and forgetful. The dead die, indeed, trampled down by the crowd of the living; the place thereof shall know them no more, for that place is not in the hearts of the survivors for whose interest they have made way. But adversity and ruin point to the sepulchre, and it is not trodden on; to the chronicle, and it doth not decay. Who would substitute the rush of a new nation, the struggle of an awakening power, for the dreamy sleep of Italy's desolation, for her sweet silence of melancholy thought, her twilight time of everlasting memories?

Such, we think, are the principal distinctive attributes of the Italian cottage. Let it not be thought that we are wasting time in the contemplation of its beauties; even though they are of a kind which the architect can never imitate, because he has no command over time, and no choice of situation; and which he ought not to imitate, if he could, because they are only locally desirable or admirable. Our object, let it always be remembered, is not the attainment of architectural data, but the formation of taste. — *Oct.* 12. 1837.

ART. III. *Candidus's Note-Book.*

Fasciculus X.

"Sicut meus est mos,
Nescio quid meditans nugarum; et totus in illis."

I. THERE are two sets of persons whom an architect has to endeavour to please, but whose demands are so opposite, that he generally ends by satisfying neither; for the one expect him to be able to show precedent for every thing in his designs; while the others cry out loudly for originality. Nay, this is not the worst; since there are people who insist upon his giving them something perfectly original — quite out of the common way, and then are dissatisfied because every thing is not quite commonplace. The cry then is, "Where did one ever see this done before? what authority have you for doing that? where could the man pick up that idea? what could induce him to introduce this?" Good souls! they do not want such new-fangled things, not they: the originality they admire is not of the "spick and span" new kind, but of the sober "ready cut and dry" sort, all ready made in Stuart's *Athens*. Well, among the qualifications of an architect, Vitruvius, who insists upon so many, has certainly left out of the list the most important and indispensable one of all, the patience of a Job.

II. "I do not approve of tampering with columns," said a friend to me not long ago. "Can we ever have anything better

than the ancient examples?" *Scusate:* — In the first place, you prejudge, by employing a term intended to insinuate that the result must of necessity be an unhappy one; in the next, you would limit art itself to what it has accomplished, denying the possibility of its making any fresh achievements. As you say, we might go on merely repeating what has been done before, and done so excellently, that we ought to despair of doing better, or even so well. Nor do I know that I can give a more suitable reply wherefore we should not be so content, than by starting another question: Wherefore should we not proceed a step further in content, and be content to dismiss our solicitude about such matters altogether; and enter into compromise to forego all enjoyment, in order, at the same time, to escape all trouble, annoyance, chagrin, in one expressive word, all the *botheration*, they occasion us? After all, art is not the world's daily bread; it can shift without it: at all events, people frequently put up with, and pass as current, the mere Brummagem counterfeit of it.

III. Every body has a fling at the National Gallery, against which he conceives he may jerk a morsel of criticism with perfect impunity, it having been made a sort of outlaw and Pariah, whom no one is called upon to defend. Fortunately, some of the missiles directed against it are not very sharp, neither pointed nor acute; little better, in truth, than so much mud, serving well enough to bespatter, but inflicting no very serious wound. One accusation against the building is, that it is too low; that its height is not at all in proportion to its length; that is, it is of long, and not of lofty, proportions. Yet, surely, this cannot very reasonably be construed as an imperfection, or as contradictory to the external character suitable for such an edifice, wherein we very naturally look for magnitude of length, not that of height. But people have got it into their heads that loftiness is a most excellent quality, and accordingly make it a *sine quâ non;* quite forgetting that, like most other qualities, its excellence is not positive, but relative, and that it ceases to be meritorious if misplaced and misapplied. In proof of this, what is heaviness, but misapplied solidity? or what is flimsiness, save misapplied lightness and delicacy? poverty, than misapplied simplicity? tawdriness, than misapplied and exaggerated embellishment? It is the same, in regard to such qualities, as it is to colours: the most beautiful, or such as are generally acknowledged to be such, become absolutely frightful, almost horrifying, when misplaced. Do you question this? Go, then, and fall in love with a pea-green complexion, azure cheeks, snowy hair, jet-black lips and teeth, and rosy eyes of "love's own proper hue." Why do you start back as from a monster, when, according to your own principles of criticism, or else criticism without prin-

ciples, the snowiness, and the azureness, and the rosiness, being all very captivating qualities in themselves, you ought to be enraptured with them?

IV. What chiefly, I suppose, recommends Elizabethan ornament is, that patterns for it may be made very expeditiously, and quite at hap-hazard, without study, or even thought. In fact, nothing more is requisite than to fold up a sheet of paper, and then, with a pair of scissors, cut as many or few twistings, notchings, and zig-zags as you please. Of this process, some whimsical pattern is sure to be the result; perhaps as good as the very best, certainly not at all uglier than the generality of Elizabethan monstrosities. *Probatum est.*

V. Little as I admire the front of the new Marine Assurance Office, Cornhill, I feel grateful to the architect for having clapped a specimen of Italian Ionic cheek-by-jowl close to a Grecian one; and, as his columns differ very little as to size from those of the Norwich Union, he has thus furnished us with a most striking contrast; one which shows, beyond what words can express, the utter dissimilarity between the two styles. It really required some courage in him to take up his station by the side of such a malicious tell-tale next door neighbour. What miserably stunted, misshapen, and grotesque things are the Italian capitals in comparison with the Greek ones! They are Ionic after the fashion of *lucus a non lucendo;* for of their origin they betray no more than what serves to convict them of utter degeneracy.

VI. Either his printer must have lost several pages of copy, or Mr. T. Roscoe must be the prince of practical hoaxers; for, after promising us, at the head of his fifth chapter, in the new volume of the *Landscape Annual*, something about the "Public Edifices of Saragossa," he fudges us off with the following bit of "ready cut and dried:" — "The artist and amateur might spend days and weeks no less profitably, than with delight, in exploring the treasures of the religious edifices, the colleges, and old convents of Saragossa." It is certainly not credible, yet it is a stubborn fact, that the above is the sum total of Mr. Roscoe's information. Consequently, we must suppose he has no amateurship for such things, or, at all events, that *he* did not spend *his* time so profitably as he assures us others may do in examining the buildings of that city. It were almost charitable to imagine that the writer is one of those travellers who require no locomotive power whatever. One of the plates, however, gives a view of the Torre Nueva, or Leaning Tower, at Saragossa; which is not only a wonder of its kind, but absolutely miraculous; since it inclines so much, that the centre of gravity falls greatly beyond the base. With singular *naïveté*, Mr. Roscoe tells us "it has evidently lost its perpendicular altitude." Ay, evidently enough!

it being about midway between a perpendicular and horizontal position; and I conceive the artist must have been "evidently out of his perpendicular altitude" when he sketched it, consequently not in a condition to be over and above exact and scrupulous. Ponz merely says that it is *algo ladeada* (somewhat on one side or awry); but here it is made so much awry, that one cannot look at it without making a wry face.

VII. Here are two bitter pills for Mr. Gwilt: the first is, that *Schinkelism* has actually crossed the Atlantic; for the *façade* of the Berlin Museum has been followed in the design for the new Exchange at New York. The next is, that, regardless of his anathema on that piece of architecture, a correspondent of the *Athenæum*, who writes from Berlin, has just spoken of it in the following terms: — "In the classic taste, it is, perhaps, the most remarkable building in the century; and, beyond all but a doubt, the most beautiful. Nothing so perfectly elegant can be more perfectly simple. There is a sweetness of effect, if I may so express myself, in this beautiful colonnade, which at first sight passes for positive enchantment, and charms on repeated view, like a lovely face within which is seated an intelligent soul. To be simple, yet striking; unfantastic, yet original; seems the *arcanum magnum* which modern architects have so seldom discovered; and, truly, not often lost their precious time in search of." What will Mr. Gwilt say? why, that the writer is unacquainted with the first principles of architecture; for, speaking of this edifice and of the *Foreign Quarterly* reviewer's description of it, he tells us, "It is easy to conceive how a person unacquainted with the first principles of architecture, *which the reviewer evidently is*, may have his eye dazzled and carried away" (odd expression that!) "by a colonnade of so great an extent: but the eye of the educated architect is not satisfied with a meagre display of this sort. The want of variety, and of light and shade consequent, renders the mass uninteresting: it has no feature; all is sameness." Meagre display, indeed! I wish Mr. Gwilt would enlighten the world by publishing some design of his own, exemplifying his ideas of richness. However, as he has not taken any notice in his *Appendix* of the contradiction with which the *Foreign Quarterly* reviewer twitted him, in first accusing the building with being meagre, and deficient in variety and light and shade, and then immediately adding that it is more like the composition of a scene painter than an architect; that is, essentially scenic. I suppose he found that he had muddled the matter completely, and let the world see that his own judgment was gone away to bear the reviewer's eye company. To return to the writer in the *Athenæum*, I ought to observe that, in what he afterwards says, he greatly qualifies, almost indeed neutralises, his previous

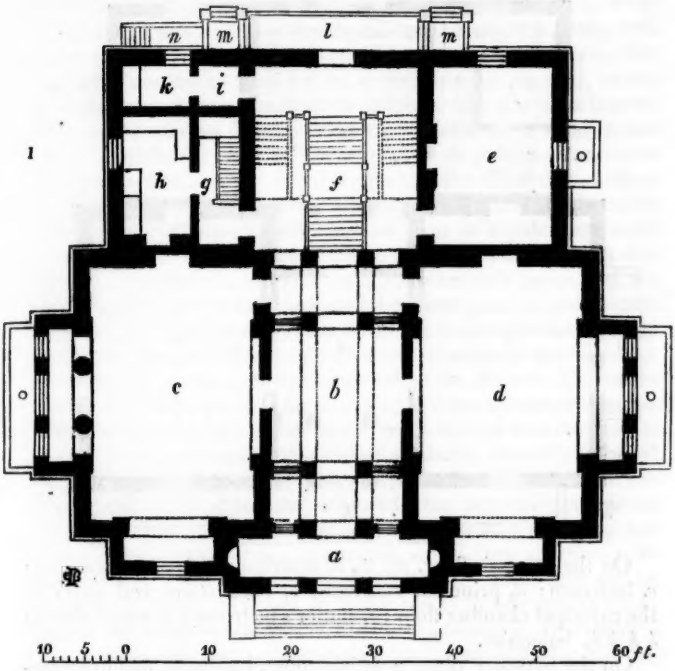
commendation; inasmuch as, according to him, the entablature is so extremely light, that the columns appear almost "to support nothing." Undoubtedly, the cornice would have been all the better had there been additional mouldings beneath those immediately under the corona, more especially as the frieze is plain; yet both that member and the whole entablature have the same proportions assigned to them, as in the usual Grecian examples. It is further objected, that the square mass which screens the upper part of the dome seems a double crime against *harmony* and *economy*. This I cannot help considering no better than hypercriticism. Most certainly, such form does not accord with the internal dome; but, then, it is not seen within the building; and it certainly does harmonise better with the exterior where it is visible, than a flattish dome would have done. Neither that much can be alleged against it on the score of economy, since to have rendered the dome itself at all an effective feature externally, would have been attended with as great, if not even greater, expense. Besides, if we once begin to countenance objections of that kind, we shall suffer ourselves to be led on until we give up our own St. Paul's to reprobation; because there, in utter defiance of such principles of economy, Wren has not only built an external dome, enclosing the inner one, but has placed an entire upper order along the sides of his building, merely to give those elevations sufficient height, and to screen the roof and buttresses over the side ailes. Consequently, if Schinkel is to be censured, our own Sir Christopher must appear a very far greater offender.

ART. IV. *Design for a Suburban Residence to be erected at Stuttgart, by Direction of His Majesty the King of Würtemberg.* By E. B. LAMB, Fellow of the Royal Institute of British Architects.

ABOUT the end of the year 1836, I received instructions from His Excellency the Count Mandelsloh to prepare a design for a suburban residence, to be erected in the neighbourhood of Stuttgart, by direction of His Majesty the King of Würtemberg.

The main characteristic of the building was to be English, or, rather, Anglo-Italian; of simple design, and to comprise the English modes of fitting up, with open fireplaces and other requisites, so as to give a certain English appearance to the whole design: the object being, in this building, to adapt the best known English comforts to the climate of Germany. These requisites were dictated by His Excellency, and have since been approved by His Majesty.

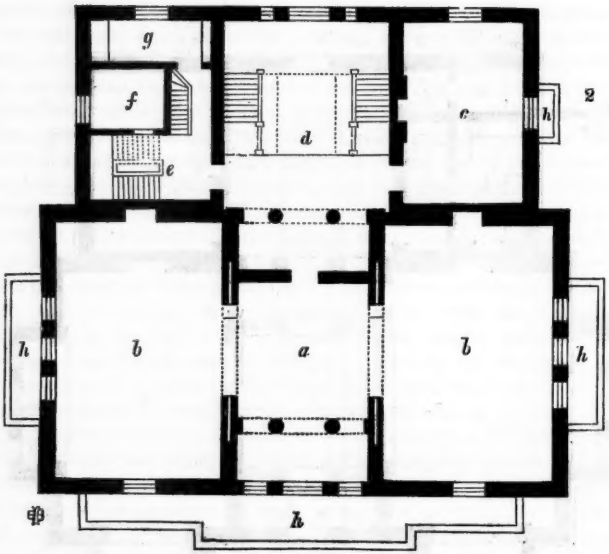
It will be readily seen that there were many difficulties to sur-



mount, and many that were, to a certain degree, insurmountable. For instance, although the cheerful aspect of an open fireplace was a desideratum, if, in our country, it has been found insufficient to warm a tolerably sized room, in a climate so cold in winter as that of Stuttgart the difficulty must be still greater. This rendered it absolutely necessary to provide for heating-stoves, or the hot-water apparatus of this country; and the latter method I preferred, as being less prejudicial to health.

The design comprises, on the basement floor, a kitchen, two pantries, larders, scullery, servants' hall, cellars, housekeeper's room, two bedrooms, servants' washing-room and room for cleaning knives and shoes, wine and beer cellars, fuel cellars, and back entrance.

On the ground floor in *fig.* 1. *a* is a porch; *b*, a hall; *c*, dining-room; *d*, library; *e*, breakfast-room; *f*, principal staircase; *g*, back stairs; *h*, butler's room; *i*, lobby; *k*, water-closet; *l*, balcony; *m m*, steps to the garden; *n*, back entrance to the basement.



On the one-pair floor, *fig.* 2., *a*, anteroom; *b b*, drawingrooms; *c*, bedroom; *d*, principal staircase; *e*, back stairs and stairs to the principal chamber floor; *f*, butler's bedroom; *g*, water-closet; *h h h h*, balconies.

On the two-pair plan, a sitting-room, bedroom, and dressing-room, *en suite*; the dressing-room supplied with a bath, with hot and cold water laid on; five other bedrooms, closets, &c.

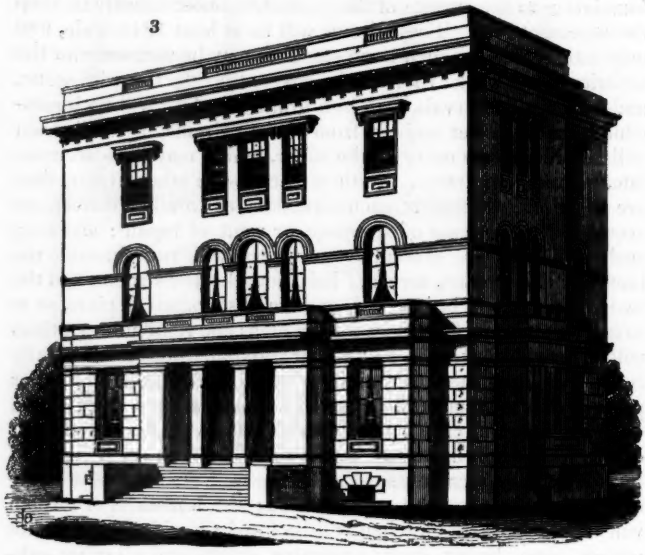
In the upper story, a tank will be fixed for supplying all the bedrooms with water, by means of pipes; and a furnace and boiler will also be fixed in this situation, to which the water will be supplied from the tank by a pipe and ball-cock; pipes from the boiler will also be laid on, to convey the hot water to the bedrooms and baths; and waste pipes will be fixed to the drains. A small furnace will be sufficient for this purpose, which would consume but little fuel; and it might be made to answer the double purpose of heating a room, as well as heating water: the only requisite would be, to have the means of shutting off the communication of heat to the room at pleasure.

The whole of the kitchen floor will be sunk about 4 ft. below the surface of the ground; and areas will be provided, 18 in. below the floor of the kitchen, of sufficient width to give ample light into the various rooms; and, for the better resistance of the pressure of the ground on the outside, they will be built in curved forms. In the situations where the areas will be intercepted, air-drains are to be constructed from the bottom of the

foundation to the surface of the ground, so as effectually to keep the basement dry. These drains will be at least 12 in. wide, and only intercepted by such bond stones as may be necessary for the security of the work: they will be covered on the top with stone, and, at certain intervals, with iron gratings. As it will be impossible to exclude wet entirely from the air-drains, a small drain will be provided to carry off the water, which may here accumulate, to the main drains. With respect to the other drains, they are to be constructed in such situations as to allow convenient access to them in case of stoppage or want of repair; and only such drains as are absolutely necessary will run through the house. The kitchen, servants' hall, housekeeper's room, and the two bedrooms, will be boarded, and the joists raised on piers, so as to leave clear room for ventilation beneath; and ventilation gratings will be provided, of sufficient number and dimensions to effectually resist that great enemy to buildings called the dry rot. The other parts of the basement will be paved with stone upon brick withs, or piers; the same care being taken to preserve a free circulation of air, as the only means of preventing damp, so easily imbibed by stone. I need scarcely say that all the walls, except those of the cellars, will be plastered and coloured; the housekeeper's room will be papered; the kitchen will be fitted up with dressers, hot closets, oven, boiler, steam apparatus, stoves, and all other culinary utensils of the most approved invention. Hot water will be supplied by means of pipes from the boiler to convenient situations in the kitchen, and where otherwise necessary. The larders and pantries will have some stone, and some wooden shelves, and rails with shifting hooks. The furnace for the heating apparatus will be fixed in the basement.

The porch on the ground floor is to be of stone; and the mouldings of the capital of the antæ will be continued round the inside, so as to form a support, if I may so call it, for the architrave and ceiling to rest upon. The ceiling will be divided into five compartments, and a moulding will go round each panel; the plinth and base moulding will also run round the porch, for the purpose of giving connexion to the design. At each end of the porch, niches will be formed, where figures or candelabra may be placed. The paving within the porch will be of two colours, in octagon and square patterns. The entrance doors will be of oak, and hung folding; the upper panels will be glazed with plate glass.

The hall will possess some variety, though still consistent with its utility; and, from the porch, a sort of vestibule will be formed, by carrying up dwarf partitions between the wall and the pillars, to the height of the doors. By this arrangement, a situation is provided for the porter's chair; and the inner part of the hall is kept clear for communication with the principal entrances to the dining-room and library; the farther end of the hall is also screened in the



same manner (see the lightly tinted parts of the plan *fig.*1.). The dining-room door, as well as the entrance to the kitchen, &c., are thus effectually screened, so that servants can supply the dining-room without being seen, or being in the way of company entering the house. These screens will also add considerably to the pictorial effect of the hall. The floor will be paved with two patterns of stone, and the ceiling will be paneled and moulded.

Although the principal part of the decorative painting, sculpture, and glazing in this design will be matter for after-considerations, I will here mention some things which would be suitable to a house of this kind. The paving of the hall being in two colours, the panels of the ceiling should also show some of the same tints. The walls should be of one colour, except such basso-relievos as might be required to decorate it: these should be of a marble tinge, somewhat lighter than the walls; while the beams of the ceiling, being of considerable extent, should be in imitation of wood.

The plinth and moulding of the antæ should be continued all round the hall, being only intercepted by the doors; the architrave and mouldings of the cap should also be continued round. Over, and on each side of the doors, might be placed some appropriate sculpture. Some rather massive seats, characteristic of the style, would help to give effect to this apartment. On entering the dining-room, the appearance will be somewhat picturesque, although the form does not deviate from a regular

figure. The recess opposite the centre door, with columns and some warm-coloured glass in the windows, and the recess at the end, with a single bordered window, will give a sufficient diversity of light to prevent the possibility of the room looking gloomy; at the same time, some depth of shadow at the other end of the room will be reserved, so as to render effective any articles of furniture sufficiently elegant or costly to demand a prominent notice. The columns and pilasters may be of sienna marble; and the walls may be painted to harmonise with them. Round the room, between the pilasters, and within a few inches of the architrave, might be some basso-relievos; which, if of a light cream or buff colour, would contrast admirably with the walls. The whole room will be finished in strict accordance with the design, which is intended to convey an architectural character throughout, avoiding all frivolous parts, which might create confusion, or uncertainty as to their application. Thus, the pilasters will be connected to the walls by continuous mouldings at the cap and the base; the ceiling divided into compartments with beams, of course ornamental, and of sufficient apparent strength to carry its weight; and the paneling of the ceiling painted in such a manner as that there can be no doubt that the material it is intended to represent would be sufficiently strong for the purpose. In ceilings of this kind, much might be done in imitation of various woods, that would produce an exceedingly rich effect; particularly when interspersed with gold mouldings on dark grounds, or bronze on light. Flowers, judiciously placed, might also add greatly to the variety, as well as beauty and richness, of the ceiling. Even heraldic devices might, with their many-coloured bearings, be used with good effect; but, if these latter subjects are employed, the forms should be regular, not like shields, or other things characteristic of the Gothic style. Properly introduced, they would become interesting, by giving a diversity of colour; and many agreeable associations would be created in our minds by such ornaments.

The chimney-piece and shelf should be of the same kind of marble as the columns; the base moulding of the room, as before, continuing round the jambs; which jambs should resemble pedestals placed against the wall, supporting a massive moulded shelf; and the same idea should pervade the whole. The chimney-piece should be equally a part of the design, and unite as well to the main lines as the columns or pilasters; by which means a general harmony will be preserved. There will be no difficulty in uniting the fender to this design, as this, although part of the furniture, still is as much required to preserve the character of the architecture as any other part of the room. As all furniture, when placed in a room, becomes part of the room itself, it is associated with its uses; and, therefore, it

be otherwise. The prosperity of nations, as of individuals, is cold, and hard-hearted, and forgetful. The dead die, indeed, trampled down by the crowd of the living; the place thereof shall know them no more, for that place is not in the hearts of the survivors for whose interest they have made way. But adversity and ruin point to the sepulchre, and it is not trodden on; to the chronicle, and it doth not decay. Who would substitute the rush of a new nation, the struggle of an awakening power, for the dreamy sleep of Italy's desolation, for her sweet silence of melancholy thought, her twilight time of everlasting memories?

Such, we think, are the principal distinctive attributes of the Italian cottage. Let it not be thought that we are wasting time in the contemplation of its beauties; even though they are of a kind which the architect can never imitate, because he has no command over time, and no choice of situation; and which he ought not to imitate, if he could, because they are only locally desirable or admirable. Our object, let it always be remembered, is not the attainment of architectural data, but the formation of taste. — *Oct.* 12. 1837.

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II. "I do not approve of tampering with columns," said a friend to me not long ago. "Can we ever have anything better

than the ancient examples?" *Senate:* — In the first place, you prejudge, by employing a term intended to insinuate that the result must of necessity be an unhappy one; in the next, you would limit art itself to what it has accomplished, denying the possibility of its making any fresh achievements. As you say, we might go on merely repeating what has been done before, and done so excellently, that we ought to despair of doing better, or even so well. Nor do I know that I can give a more suitable reply wherefore we should not be so content, than by starting another question: Wherefore should we not proceed a step further in content, and be content to dismiss our solicitude about such matters altogether; and enter into compromise to forego all enjoyment, in order, at the same time, to escape all trouble, annoyance, chagrin, in one expressive word, all the *botheration*, they occasion us? After all, art is not the world's daily bread; it can shift without it: at all events, people frequently put up with, and pass as current, the mere Brummagem counterfeit of it.

III. Every body has a fling at the National Gallery, against which he conceives he may jerk a morsel of criticism with perfect impunity, it having been made a sort of outlaw and Pariah, whom no one is called upon to defend. Fortunately, some of the missiles directed against it are not very sharp, neither pointed nor acute; little better, in truth, than so much mud, serving well enough to bespatter, but inflicting no very serious wound. One accusation against the building is, that it is too low; that its height is not at all in proportion to its length; that is, it is of long, and not of lofty, proportions. Yet, surely, this cannot very reasonably be construed as an imperfection, or as contradictory to the external character suitable for such an edifice, wherein we very naturally look for magnitude of length, not that of height. But people have got it into their heads that loftiness is a most excellent quality, and accordingly make it a *sine quâ non;* quite forgetting that, like most other qualities, its excellence is not positive, but relative, and that it ceases to be meritorious if misplaced and misapplied. In proof of this, what is heaviness, but misapplied solidity? or what is flimsiness, save misapplied lightness and delicacy? poverty, than misapplied simplicity? tawdriness, than misapplied and exaggerated embellishment? It is the same, in regard to such qualities, as it is to colours: the most beautiful, or such as are generally acknowledged to be such, become absolutely frightful, almost horrifying, when misplaced. Do you question this? Go, then, and fall in love with a pea-green complexion, azure cheeks, snowy hair, jet-black lips and teeth, and rosy eyes of "love's own proper hue." Why do you start back as from a monster, when, according to your own principles of criticism, or else criticism without prin-

ciples, the snowiness, and the azureness, and the rosiness, being all very captivating qualities in themselves, you ought to be enraptured with them?

IV. What chiefly, I suppose, recommends Elizabethan ornament is, that patterns for it may be made very expeditiously, and quite at hap-hazard, without study, or even thought. In fact, nothing more is requisite than to fold up a sheet of paper, and then, with a pair of scissors, cut as many or few twistings, notchings, and zig-zags as you please. Of this process, some whimsical pattern is sure to be the result; perhaps as good as the very best, certainly not at all uglier than the generality of Elizabethan monstrosities. *Probatum est.*

V. Little as I admire the front of the new Marine Assurance Office, Cornhill, I feel grateful to the architect for having clapped a specimen of Italian Ionic cheek-by-jowl close to a Grecian one; and, as his columns differ very little as to size from those of the Norwich Union, he has thus furnished us with a most striking contrast; one which shows, beyond what words can express, the utter dissimilarity between the two styles. It really required some courage in him to take up his station by the side of such a malicious tell-tale next door neighbour. What miserably stunted, misshapen, and grotesque things are the Italian capitals in comparison with the Greek ones! They are Ionic after the fashion of *lucus a non lucendo;* for of their origin they betray no more than what serves to convict them of utter degeneracy.

VI. Either his printer must have lost several pages of copy, or Mr. T. Roscoe must be the prince of practical hoaxers; for, after promising us, at the head of his fifth chapter, in the new volume of the *Landscape Annual*, something about the "Public Edifices of Saragossa," he fudges us off with the following bit of "ready cut and dried:"—"The artist and amateur might spend days and weeks no less profitably, than with delight, in exploring the treasures of the religious edifices, the colleges, and old convents of Saragossa." It is certainly not credible, yet it is a stubborn fact, that the above is the sum total of Mr. Roscoe's information. Consequently, we must suppose he has no amateurship for such things, or, at all events, that *he* did not spend *his* time so profitably as he assures us others may do in examining the buildings of that city. It were almost charitable to imagine that the writer is one of those travellers who require no locomotive power whatever. One of the plates, however, gives a view of the Torre Nueva, or Leaning Tower, at Saragossa; which is not only a wonder of its kind, but absolutely miraculous; since it inclines so much, that the centre of gravity falls greatly beyond the base. With singular *naïveté*, Mr. Roscoe tells us "it has evidently lost its perpendicular altitude." Ay, evidently enough!

it being about midway between a perpendicular and horizontal position; and I conceive the artist must have been "evidently out of his perpendicular altitude" when he sketched it, consequently not in a condition to be over and above exact and scrupulous. Ponz merely says that it is *algo ladeada* (somewhat on one side or awry); but here it is made so much awry, that one cannot look at it without making a wry face.

VII. Here are two bitter pills for Mr. Gwilt: the first is, that *Schinkelism* has actually crossed the Atlantic; for the *façade* of the Berlin Museum has been followed in the design for the new Exchange at New York. The next is, that, regardless of his anathema on that piece of architecture, a correspondent of the *Athenæum*, who writes from Berlin, has just spoken of it in the following terms: — "In the classic taste, it is, perhaps, the most remarkable building in the century; and, beyond all but a doubt, the most beautiful. Nothing so perfectly elegant can be more perfectly simple. There is a sweetness of effect, if I may so express myself, in this beautiful colonnade, which at first sight passes for positive enchantment, and charms on repeated view, like a lovely face within which is seated an intelligent soul. To be simple, yet striking; unfantastic, yet original; seems the *arcanum magnum* which modern architects have so seldom discovered; and, truly, not often lost their precious time in search of." What will Mr. Gwilt say? why, that the writer is unacquainted with the first principles of architecture; for, speaking of this edifice and of the *Foreign Quarterly* reviewer's description of it, he tells us, "It is easy to conceive how a person unacquainted with the first principles of architecture, *which the reviewer evidently is*, may have his eye dazzled and carried away" (odd expression that!) "by a colonnade of so great an extent: but the eye of the educated architect is not satisfied with a meagre display of this sort. The want of variety, and of light and shade consequent, renders the mass uninteresting: it has no feature; all is sameness." Meagre display, indeed! I wish Mr. Gwilt would enlighten the world by publishing some design of his own, exemplifying his ideas of richness. However, as he has not taken any notice in his *Appendix* of the contradiction with which the *Foreign Quarterly* reviewer twitted him, in first accusing the building with being meagre, and deficient in variety and light and shade, and then immediately adding that it is more like the composition of a scene painter than an architect; that is, essentially scenic. I suppose he found that he had muddled the matter completely, and let the world see that his own judgment was gone away to bear the reviewer's eye company. To return to the writer in the *Athenæum*, I ought to observe that, in what he afterwards says, he greatly qualifies, almost indeed neutralises, his previous

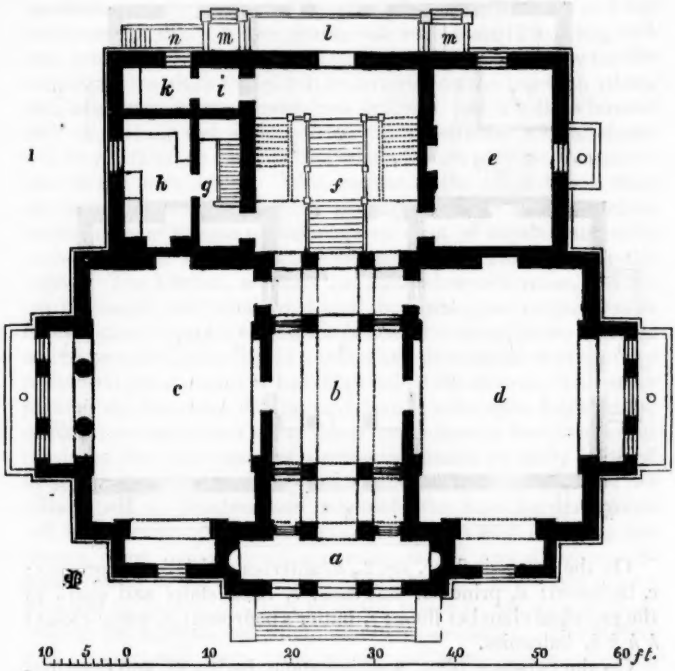
commendation; inasmuch as, according to him, the entablature is so extremely light, that the columns appear almost "to support nothing." Undoubtedly, the cornice would have been all the better had there been additional mouldings beneath those immediately under the corona, more especially as the frieze is plain; yet both that member and the whole entablature have the same proportions assigned to them, as in the usual Grecian examples. It is further objected, that the square mass which screens the upper part of the dome seems a double crime against *harmony* and *economy*. This I cannot help considering no better than hypercriticism. Most certainly, such form does not accord with the internal dome; but, then, it is not seen within the building; and it certainly does harmonise better with the exterior where it is visible, than a flattish dome would have done. Neither that much can be alleged against it on the score of economy, since to have rendered the dome itself at all an effective feature externally, would have been attended with as great, if not even greater, expense. Besides, if we once begin to countenance objections of that kind, we shall suffer ourselves to be led on until we give up our own St. Paul's to reprobation; because there, in utter defiance of such principles of economy, Wren has not only built an external dome, enclosing the inner one, but has placed an entire upper order along the sides of his building, merely to give those elevations sufficient height, and to screen the roof and buttresses over the side ailes. Consequently, if Schinkel is to be censured, our own Sir Christopher must appear a very far greater offender.

ART. IV. *Design for a Suburban Residence to be erected at Stuttgart, by Direction of His Majesty the King of Würtemberg.* By E. B. LAMB, Fellow of the Royal Institute of British Architects.

ABOUT the end of the year 1836, I received instructions from His Excellency the Count Mandelsloh to prepare a design for a suburban residence, to be erected in the neighbourhood of Stuttgart, by direction of His Majesty the King of Würtemberg.

The main characteristic of the building was to be English, or, rather, Anglo-Italian; of simple design, and to comprise the English modes of fitting up, with open fireplaces and other requisites, so as to give a certain English appearance to the whole design: the object being, in this building, to adapt the best known English comforts to the climate of Germany. These requisites were dictated by His Excellency, and have since been approved by His Majesty.

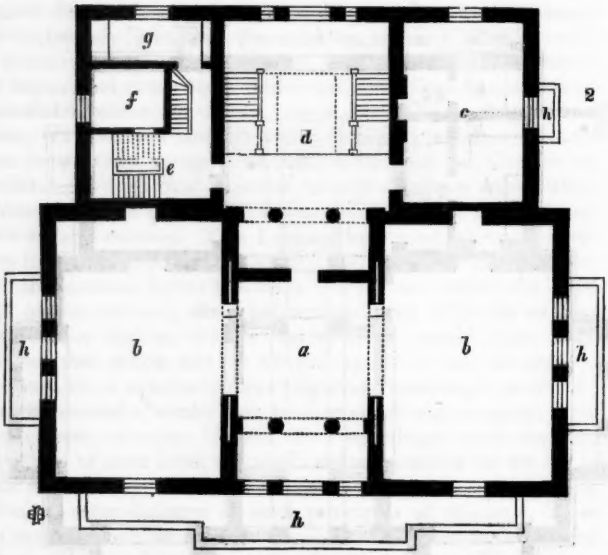
It will be readily seen that there were many difficulties to sur-



mount, and many that were, to a certain degree, insurmountable. For instance, although the cheerful aspect of an open fireplace was a desideratum, if, in our country, it has been found insufficient to warm a tolerably sized room, in a climate so cold in winter as that of Stuttgart the difficulty must be still greater. This rendered it absolutely necessary to provide for heating-stoves, or the hot-water apparatus of this country; and the latter method I preferred, as being less prejudicial to health.

The design comprises, on the basement floor, a kitchen, two pantries, larders, scullery, servants' hall, cellars, housekeeper's room, two bedrooms, servants' washing-room and room for cleaning knives and shoes, wine and beer cellars, fuel cellars, and back entrance.

On the ground floor in *fig.* 1. *a* is a porch; *b*, a hall; *c*, dining-room; *d*, library; *e*, breakfast-room; *f*, principal staircase; *g*, back stairs; *h*, butler's room; *i*, lobby; *k*, water-closet; *l*, balcony; *m m*, steps to the garden; *n*, back entrance to the basement.



On the one-pair floor, *fig.* 2., *a*, anteroom; *b b*, drawingrooms; *c*, bedroom; *d*, principal staircase; *e*, back stairs and stairs to the principal chamber floor; *f*, butler's bedroom; *g*, water-closet; *h h h h*, balconies.

On the two-pair plan, a sitting-room, bedroom, and dressing-room, *en suite*; the dressing-room supplied with a bath, with hot and cold water laid on; five other bedrooms, closets, &c.

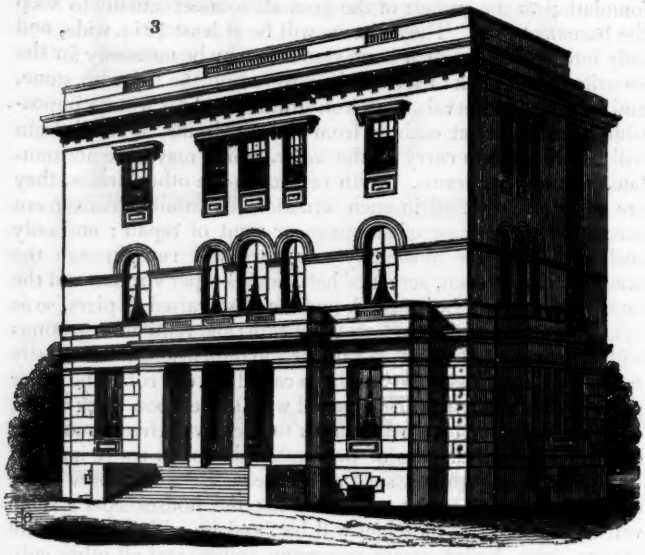
In the upper story, a tank will be fixed for supplying all the bedrooms with water, by means of pipes; and a furnace and boiler will also be fixed in this situation, to which the water will be supplied from the tank by a pipe and ball-cock; pipes from the boiler will also be laid on, to convey the hot water to the bedrooms and baths; and waste pipes will be fixed to the drains. A small furnace will be sufficient for this purpose, which would consume but little fuel; and it might be made to answer the double purpose of heating a room, as well as heating water: the only requisite would be, to have the means of shutting off the communication of heat to the room at pleasure.

The whole of the kitchen floor will be sunk about 4 ft. below the surface of the ground; and areas will be provided, 18 in. below the floor of the kitchen, of sufficient width to give ample light into the various rooms; and, for the better resistance of the pressure of the ground on the outside, they will be built in curved forms. In the situations where the areas will be intercepted, air-drains are to be constructed from the bottom of the

foundation to the surface of the ground, so as effectually to keep the basement dry. These drains will be at least 12 in. wide, and only intercepted by such bond stones as may be necessary for the security of the work: they will be covered on the top with stone, and, at certain intervals, with iron gratings. As it will be impossible to exclude wet entirely from the air-drains, a small drain will be provided to carry off the water, which may here accumulate, to the main drains. With respect to the other drains, they are to be constructed in such situations as to allow convenient access to them in case of stoppage or want of repair; and only such drains as are absolutely necessary will run through the house. The kitchen, servants' hall, housekeeper's room, and the two bedrooms, will be boarded, and the joists raised on piers, so as to leave clear room for ventilation beneath; and ventilation gratings will be provided, of sufficient number and dimensions to effectually resist that great enemy to buildings called the dry rot. The other parts of the basement will be paved with stone upon brick withs, or piers; the same care being taken to preserve a free circulation of air, as the only means of preventing damp, so easily imbibed by stone. I need scarcely say that all the walls, except those of the cellars, will be plastered and coloured; the housekeeper's room will be papered; the kitchen will be fitted up with dressers, hot closets, oven, boiler, steam apparatus, stoves, and all other culinary utensils of the most approved invention. Hot water will be supplied by means of pipes from the boiler to convenient situations in the kitchen, and where otherwise necessary. The larders and pantries will have some stone, and some wooden shelves, and rails with shifting hooks. The furnace for the heating apparatus will be fixed in the basement.

The porch on the ground floor is to be of stone; and the mouldings of the capital of the antæ will be continued round the inside, so as to form a support, if I may so call it, for the architrave and ceiling to rest upon. The ceiling will be divided into five compartments, and a moulding will go round each panel; the plinth and base moulding will also run round the porch, for the purpose of giving connexion to the design. At each end of the porch, niches will be formed, where figures or candelabra may be placed. The paving within the porch will be of two colours, in octagon and square patterns. The entrance doors will be of oak, and hung folding; the upper panels will be glazed with plate glass.

The hall will possess some variety, though still consistent with its utility; and, from the porch, a sort of vestibule will be formed, by carrying up dwarf partitions between the wall and the pillars, to the height of the doors. By this arrangement, a situation is provided for the porter's chair; and the inner part of the hall is kept clear for communication with the principal entrances to the dining-room and library; the farther end of the hall is also screened in the



same manner (see the lightly tinted parts of the plan *fig.*1.). The dining-room door, as well as the entrance to the kitchen, &c., are thus effectually screened, so that servants can supply the dining-room without being seen, or being in the way of company entering the house. These screens will also add considerably to the pictorial effect of the hall. The floor will be paved with two patterns of stone, and the ceiling will be paneled and moulded.

Although the principal part of the decorative painting, sculpture, and glazing in this design will be matter for after-considerations, I will here mention some things which would be suitable to a house of this kind. The paving of the hall being in two colours, the panels of the ceiling should also show some of the same tints. The walls should be of one colour, except such basso-relievos as might be required to decorate it: these should be of a marble tinge, somewhat lighter than the walls; while the beams of the ceiling, being of considerable extent, should be in imitation of wood.

The plinth and moulding of the antæ should be continued all round the hall, being only intercepted by the doors; the architrave and mouldings of the cap should also be continued round. Over, and on each side of the doors, might be placed some appropriate sculpture. Some rather massive seats, characteristic of the style, would help to give effect to this apartment. On entering the dining-room, the appearance will be somewhat picturesque, although the form does not deviate from a regular

figure. The recess opposite the centre door, with columns and some warm-coloured glass in the windows, and the recess at the end, with a single bordered window, will give a sufficient diversity of light to prevent the possibility of the room looking gloomy; at the same time, some depth of shadow at the other end of the room will be reserved, so as to render effective any articles of furniture sufficiently elegant or costly to demand a prominent notice. The columns and pilasters may be of sienna marble; and the walls may be painted to harmonise with them. Round the room, between the pilasters, and within a few inches of the architrave, might be some basso-relievos; which, if of a light cream or buff colour, would contrast admirably with the walls. The whole room will be finished in strict accordance with the design, which is intended to convey an architectural character throughout, avoiding all frivolous parts, which might create confusion, or uncertainty as to their application. Thus, the pilasters will be connected to the walls by continuous mouldings at the cap and the base; the ceiling divided into compartments with beams, of course ornamental, and of sufficient apparent strength to carry its weight; and the paneling of the ceiling painted in such a manner as that there can be no doubt that the material it is intended to represent would be sufficiently strong for the purpose. In ceilings of this kind, much might be done in imitation of various woods, that would produce an exceedingly rich effect; particularly when interspersed with gold mouldings on dark grounds, or bronze on light. Flowers, judiciously placed, might also add greatly to the variety, as well as beauty and richness, of the ceiling. Even heraldic devices might, with their many-coloured bearings, be used with good effect; but, if these latter subjects are employed, the forms should be regular, not like shields, or other things characteristic of the Gothic style. Properly introduced, they would become interesting, by giving a diversity of colour; and many agreeable associations would be created in our minds by such ornaments.

The chimney-piece and shelf should be of the same kind of marble as the columns; the base moulding of the room, as before, continuing round the jambs; which jambs should resemble pedestals placed against the wall, supporting a massive moulded shelf; and the same idea should pervade the whole. The chimney-piece should be equally a part of the design, and unite as well to the main lines as the columns or pilasters; by which means a general harmony will be preserved. There will be no difficulty in uniting the fender to this design, as this, although part of the furniture, still is as much required to preserve the character of the architecture as any other part of the room. As all furniture, when placed in a room, becomes part of the room itself, it is associated with its uses; and, therefore, it

should be united to its forms: it may, in fact, be called the still life of the picture.

The doors should be three-paneled, richly moulded, and painted in imitation of two different woods; and the moulding on the inside might resemble those of the ceiling, in colour at least. The windows will be glazed with plate glass; and the shutters, which are to fold back against the sides of the recesses, will correspond with the doors.

A difference in the general arrangement of the paneling in the ceiling, less gilding, and a more solid appearance, will be the general characteristics of the library. The architrave and cornices, and also the plinth and base moulding, in this room, will go all round and within the recesses. Two colours might be well used for the walls and pilasters in this room.

A general aerial character should pervade the breakfast-room; and the form should be of a less massive description than those of the dining-room; and, as this is a much smaller room, less paneling will suffice for the ceiling: but still, some marked supporting beam or beams should be shown for the purpose of satisfying the mind. A rich moulded cornice should go round this room, and some sculptured ornament would be an appropriate addition.

Principal stairs. The steps and landings will be of stone, with moulded nosings; the handrail of mahogany, boldly moulded; and a rich scroll paneling, in the place of the balusters, will be fixed between the newels; each of which will support a bronze figure. The large window will be glazed with painted glass. A window in this situation presents an opportunity for an historical subject; in which case, the tone of colour of the staircase walls should be a warm grey, rather dark; and the ceiling, richly moulded panels, in imitation of wood. Very little variety of colour would be required here, as the principal feature would be the painted glass; and every other object should be coloured in a subordinate manner, so as to give value to the main feature. The colour of the stone steps I should prefer being rather dark, as the eye would then rest with satisfaction on the principal object; and, when it had drunk deeply, it would insensibly wander to other objects in search of new beauties. The staircase will be supported upon arches; and under the landing will be an entrance to the stone balcony leading to the garden, &c.: the doors of this entrance are to have some stained glass.

The back stairs lead from the basement to the roof, as shown in the plans, and will be perfectly fire-proof.

The butler's room will be fitted up with closets, shelves, sink, strong closet, &c., with hot and cold water laid on from the boiler and cistern.

The water-closet and dressing-room will have every convenience of water, fixed basin, and drainage.

As the drawingrooms are intended to be *en suite*, they will be finished alike. The general character of this floor will be different to the one we have just described, as all the windows are arched; therefore, a greater diversity of form will be appropriate. To explain why I say the windows give the general character to the internal appearance of this floor, first, I surmise that the style of architecture now generally adopted (except the Gothic) is founded on the ancient Athenian architecture in all its details; that the want of sufficient authority for the domestic architecture of ancient Greece has driven us to their public edifices for our prototypes: beautiful as these buildings are, their characteristic features, which are columns, cannot be the characteristic features of our domestic edifices. Next to the bare walls which enclose us, and the roof which shelters us from the inclemency of the weather, the door claims our notice for ingress and egress, and the window for the admission of light: these are necessarily the leading forms of our domestic edifices, and, I might say, for the most part, of our public ones also; therefore, all other features in the room should harmonise with them. But the latitude which the knowledge of known architectural forms has given us will allow the introduction of a mixed character, provided the harmony of the design is preserved. In the anteroom of this design, I have used a screen of columns, surmounted by arches; the object being to give a symmetrical form to this room relatively to the large doors: at the same time, this screen gives a recess at the windows, which can be fitted up with couches, and a large mirror at each end, making a still more distinct separation from the other part of the room. The entrances to the drawingrooms are through the lofty arches on each side; and the doors are to slide back into the partitions shown in the plan. One sliding door in each room is to have a small door (of course, to correspond in the framing with the other), so that each room can be used separately when required. Rich damask drapery, in ample folds, hung within these arches, would have a beautiful effect. For the reasons before stated, the arch is the leading feature in this floor: the impost will be enriched, and go all round the rooms; the cornices, base, and plinth mouldings, will also be carried round the room. The ceiling should be supported by beams, resting upon cantileavers at the ends; and the paneling should be in more varied forms than described for the lower rooms. As the drawingrooms are appropriated to more elegant, light, and gay purposes, a cheerful disposition of light and shade, a diversity of colour, and a general tone of airiness, should mark their character; but still, a close adherence to propriety of construction should be indicated, that, when we

are elated with agreeable sensations, there shall be no misgivings upon directing a stricter enquiry: for, whenever the mind has contemplated an object with pleasure, it will invariably seek for further gratification in ascertaining the cause. The paneling of the ceiling is to be in imitation of wood, decorated with flowers and gilding, and a variety of colour in the flowers will be admissible; but great care must be taken that the whole has not a spotty character. Connexion in lines and forms must invariably be preserved when in the same plane: contrasts of form, such as ceilings and walls, the supporters and the supported, will frequently admit of some contrast of colour; but, as we are always more pleased when we see a moulding, a bracket, or a cove uniting the ceiling with the wall, so are we more satisfied when a connexion of colour also exists. A greater contrast may exist between the floor and the wall, so that there is a decided substance upon which the wall rests, or from which it appears to spring; but still, the ceiling must partake of some of the connecting links to make the chain perfect.

In rooms strictly architectural, the ordinary method of papering, according to fashion, should never be attended to. Fashion is capricious: architecture is fixed on reason, and its principles never change; so that, although the colours of rooms may be varied in many ways, still the same leading principles should govern their application. Imitations of different kinds of marbles may aptly be applied to these rooms. Some elegant sculpture, in compartments of wreaths, and other sculptural ornaments, principally in imitation of white or statuary marble, would be appropriate. Large plates of looking-glass, in judicious situations, would have a splendid effect; but so various are our tastes, that, if too much be done, confusion is the result; and if too little, meagreness. The doors, being of the same material as the ceiling, will partake of the same colours; and the handles to the locks will be of ivory or cut glass. The chimney-pieces will be of statuary marble; the base moulding and plinth of the room breaking round so as to form a pedestal, upon which will be raised sculptured supporters, unconnected with the wall, bearing shelves, richly carved on the edges. All the windows will be glazed with plate glass, and will open to the balconies.

I have before mentioned that the decorative painting, sculpture, and other parts, must not be considered at present as finally determined on; as also some of the minor details, which can only be fully described upon making out the working drawings.

25. Henrietta Street, Brunswick Square,
Nov. 28. 1837.

ART. V. *On Furniture.* By E. B. LAMB, F.I.B.A.

AMONG the subjects which come under the direction of the architect, furniture is not the least important; and, although by many of the profession attention to it is considered derogatory to the art, its usefulness, and the comforts which we should scarcely obtain but through its influence, afford fully sufficient reasons for bestowing some thought upon it. Usefulness and comfort are first to be obtained; and, when these are fully established, beauty of proportion, and unity with surrounding objects, should follow, so that furniture should blend and harmonise with the architecture of the room in which it is placed; without which, the most costly decoration in the one, and the most perfect character in the other, will fail to satisfy the mind.

To the want of some knowledge of the styles and details of architecture by upholsterers, may be attributed the many absurdities which we frequently discover in ornamental furniture. Although the severe character of architecture would but ill suit furniture, if columns and their accompaniments only were applied for that purpose, the union between the one and the other may be preserved by the propriety and fitness of the minor details.

In recently sketching various designs for furniture, among the number the grand piano-forte presented the greatest difficulties to surmount: the form prescribed by its uses, the great space required for it in a room, and the very unarchitectural character it assumed, set me to consider whether some alterations could not be made, so as to embrace all the utility of the present instrument with more beauty; and for this end the sketch *fig.* 4. was produced, which I send merely as a hint to manufacturers; at the same time stating my objections to the instruments now in use: it will be for others to object to mine.

The horizontal grand piano-forte, which is the most perfect instrument now in use, is of such an awkward shape, that it is almost impossible to give any expression of style to it; and, in a moderate-sized house, it occupies so large a portion of the room in which it is placed, that now the upright grand piano-forte is generally substituted for it. This is a more recent invention, and certainly is more compact in form; and, although much might have been done in the way of characteristic decoration, it is seldom distinguished by any marks of judgment or good taste. The upholsterer (if he makes the design) gives it columns so shrunk in the shafts, that they may frequently be seen twenty or thirty diameters high: the capitals and bases are equally inconsistent; and the cornice is a crowning absurdity of massive ovolo and turned beads. But, if no attempts at strict architecture

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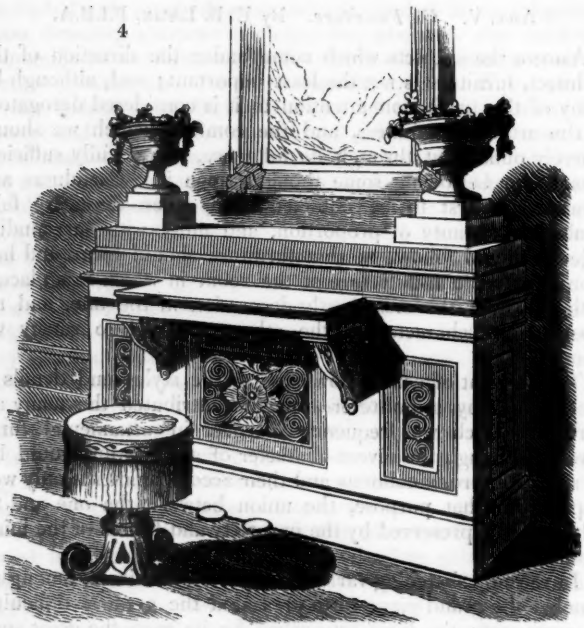


had been made, the form would, perhaps, by its simplicity, have been more in character with the architecture of the room. To produce architectural fitness of expression, it is not necessary to employ columns; and, where they are introduced so small, and in such situations, they rather create a disgust, than the pleasurable sensations they inspire when viewed as the necessary adjuncts of a portico.

The objection to an upright grand piano-forte is, in my opinion, great; for, when the player is also "obliging us with a song," at least half the delight we should feel from those "dulcet sounds" is lost in the silk which faces the singer. As this is known and acknowledged to be a defect by all makers, I am surprised that no remedy for the evil has been attempted by keeping the whole body of the instrument below the head of the performer, which a very little contrivance might effect.

Cabinet, cottage, and other small piano-fortes, are sufficiently below the voice generally for all the purposes of a singer; but they do not possess the power and variety of the grand piano. In the sketch *fig.* 4. I have endeavoured to obviate all the difficulties above mentioned: that it can be constructed, I have no doubt, and that, too, with very little alteration in the present

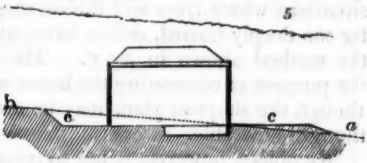
mechanism; this alteration being principally in the keys and hammers. But I may just mention one obstacle, which is independent of the instrument; viz. the great difficulty of getting makers out of the beaten track.

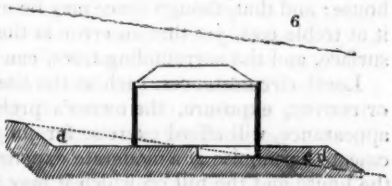
This design resembles a grand, or rather a large square, pianoforte, turned on its edge, and the keys projecting at right angles from it: the whole body of the instrument is thus kept below the performer, which renders it equal to the horizontal grand piano; while it occupies much less space than the latter instrument, and it is superior as an article of furniture. As all the sides could be finished alike, it can be placed in almost any situation, so that the performer can face the company, and thus the full effect of the voice be heard; and, if surmounted with vases of glass or alabaster, bronze figures, candelabra, or other ornaments, it would form an agreeable acquisition to the drawingroom. It may be constructed in the most simple manner, or it can be richly decorated.

25. *Henrietta Street, Brunswick Square, Sept.*, 1837.

ART. VI. *On selecting the Position of a House on the Side of a Hill.* By N.

THE selection of the exact position for a house which is to be built on the side of a hill, particularly if the slope is considerable, requires caution. The common faults of a house so placed are, that it has the appearance of being built in a hole dug out for it, and that it is very damp from an insufficiency of earth having been removed from around it. The method of driving a peg into the spot, selected for the exact level and site of the drawingroom, or entrance door, from which the foundations are to be measured, is sure to involve the owner in these difficulties; and is contrasted in *fig.* 5. with a method, shown at *fig.* 6., in which attention has been paid to the formation of a level space sufficient to hold the house, by the adoption of the well-known canal and railroad rule; viz. that of arranging that the filling up shall be exactly equal to the cutting out. In *fig.* 5., the dotted line *a b* shows the surface





of the hill; and *c*, the level space made for the house; the earth to be removed being in this case carted away to a distance. *Fig.* 6. also shows a dotted line for the original surface of the hill; but, in this case, the earth removed from *d*, instead of being carted away, is placed on *e*, so as to increase the size of the platform on which the house stands. It is obvious, also, that the whole should be done previously to the commencement of the building, so that the earth shall be wheeled across instead of round the house; the expense being very nearly the distance multiplied by the quantity. Few persons are capable of judging by the eye the space required for a house: for instance, for a building of 60 ft. square, as represented in *figs.* 5. and 6.; or the number of feet to be sunk to obtain a level space. The deception of cutting a level into a hill is singular: I have known a mason's level discredited, though twined; and water sent for to ascertain whether the ground had not been too much lowered towards the hill. In Ireland, lately, a mine agent was requested to supply water to the top of a hill, in consequence of a similar mistake; and it was suggested that it would be quite as easy to take water to the top by winding it round the hill, as across the opposite mountain to the mine.

The change in appearance which takes place on the removal of ground will sometimes alter the owner's idea of the exact position and level of the rooms; and minor alterations may then be effected at a small expense.

Situations of great exposure, where trees will scarcely grow, undoubtedly occur; and when they do, shelter, if of paramount importance, may be obtained from the hill itself; but, in all situations where trees will thrive, the house becomes eventually far too deeply buried, unless brought forward from the hill in the method shown in *fig.* 6. The adoption of a terrace for the purpose of connecting the house with the grounds or garden, though the simplest plan, may be avoided by regular banking, if thought advisable.

My object, however, is not to point out the different methods by which this principle can be carried into effect, but to remind persons about to commence building of the economy of previous arrangements in the removal of earth to form a proper site for a house; and that, though space may be eventually obtained round it at treble cost, yet that an error in the level as regards the hill surface, and the surrounding trees, can never be amended.

Local circumstances, such as the site proposed being hollow or convex, exposure, the owner's preference of a bold or snug appearance, will afford exercise for judgment, in each particular case, to harmonise at a moderate expense the connexion between the house and the hill on which it may be placed.

Penryn, January, 1837.

ART. VII. *Official Report made to Charles Boyd, Esq., Collector of Her Majesty's Customs, for the Information of the Honourable Board of Commissioners, upon Bernhardt's Stove-Furnaces.* By ANDREW URE, M.D. F.R.S., &c. Communicated by the Author.

MY DEAR SIR,

Soon after receipt of your note, enclosing M. Bernhardt's letter to the Hon. the Commissioners of Customs, relative to warming and ventilating your Long Room, I paid a visit to Lord King's house, in St. James's Square, agreeably to M. Bernhardt's invitation to inspect his plan, as erected in it. I was accompanied by an intelligent scientific friend. What was my astonishment to find no less than four large elaborate furnaces built up in that moderate-sized mansion; all of them in full activity, and consuming four times as much fuel as would, with judicious economy, have been sufficient to heat a house of four times the size. The cost to Lord King of the said furnaces, and slate-flue constructions, of M. Bernhardt cannot, I understand, be less than 1000*l.*; a sum at least four times as much as would have been adequate to the purpose in the hands of an intelligent English engineer, acquainted with the modes of heating adopted in the cotton factories.

Having caused an exact drawing to be made of one of M. Bernhardt's furnaces, I now forward it to you, and request you will give it a most deliberate consideration. You will perceive a fireplace (*fig.* 7. *a*) similar to one of those under the cockle in the cellars of the Custom House. The flame from the grate passes directly into the first flue, above *c*; which, like the other flues, is a sheet-iron pipe, 8 in. or 9 in. in diameter, and 18 ft. in length. In this single stove there are at least fourteen (I rather think 16) pipes of that size, laid zig-zag, with a slight slope to the horizon, arranged over each other in twin rows (*figs.* 8, 9.), through which the burned air and smoke circulate backwards and forwards before they are discharged into the chimney at *f*. It is obvious that the lower pairs of pipes must partake of the ignition in the fireplace. Accordingly, upon the first two occasions, when I visited the said mansion, I found the lower pipes excessively hot; and suggested to Mr. Cubitt's clerk of the works to try their temperature, by introducing into them pieces of common solder. He did so; and he afterwards produced specimens to me, which proved that the solder was not only melted, but oxidized, by the pipes. The air of the space *d d*, in which the above twin rows of pipes are enclosed, must, therefore, be rendered unpleasant and insalubrious, by coming in contact with the lower part of the range, in a degree far worse than it is by sweeping over the pyramids of your existing stoves at the Custom House. Did you adopt M. Bernhardt's furnace, you might justly inscribe over it, *Incidit in Scyllam cupiens vitare Charybdin*: in plain

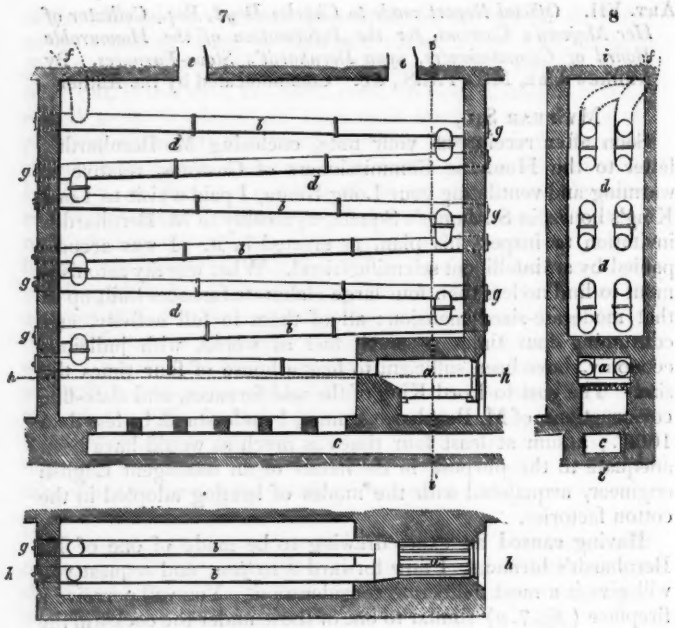


Fig. 9. is a ground plan, showing the furnace and the two lowest sheet-iron pipes.
Fig. 7. is a longitudinal section on the line *h h*.
Fig. 8. is a cross section on the line *i i*.

a, Furnace. *b*, Sheet-iron pipes. *c*, Cold air flue. *d*, Space for hot air surrounding the pipes. *e*, Flues to convey warm air to various apartments. *f*, Smoke flue. *g*, Small doors to clean out the pipes.

English, you would get out of the frying-pan into the fire. There is, moreover, not the slightest novelty in M. Bernhardt's arrangement; zig-zag pipes, laid at various slopes, having been commonly used in England, France, Germany, &c., for upwards of a century past; and, indeed, the very scheme of enclosing them in a hot-air chamber is represented in books upon stove-heating, in my possession.

With regard to the practical influence upon the feelings and the health, of M. Bernhardt's stoves, as mounted for Lord King, I cannot speak in favourable terms. The gentleman who accompanied me at the first visit, though in vigorous health, was not long in the house before he felt extremely uncomfortable; and, at the end of less than an hour, he was obliged to leave it, in consequence of a violent headach, of which he did not get rid till he had breathed the external air for some time. My own sensa-

tions were exactly similar to those I experienced when standing near the outlet-valve of hot air in your Examiner's rooms: and, indeed, the cause was quite analogous; for the air issuing from M. Bernhardt's flue orifices indicated by my trials a temperature of 150° Fahr.: and it must have been at times higher; for the clerk of the works told me it frequently broke his thermometers, which had a range up to that pitch.

M. Bernhardt has since sought to account for these *torrefying* results by saying that the fires in his stoves were then forced, in order to dry the plaster-work of the house. I grant that this may be so far true; for, undoubtedly, Lord King's family could not have endured that offensive burnt air for even half a day. Still, it is evident from these experimental facts, as well as from the construction of the furnace itself, that the least over-firing, from negligence of the servants, must communicate ignition to the sheet-iron pipe immediately connected with it; and that this pipe, so overheated, will taint all the air which passes over it. Upon Sylvester's cockle plan, as erected at the Custom House, the temperature of the hollow iron pyramid, against which the cold air impinges, is much more susceptible of regulation than the lower pipes of M. Bernhardt's scheme. Indeed, I consider Sylvester's plan, as originally constructed by William Strutt, Esq., of Derby, to be the least objectionable of all known arid-air furnaces.

In his magnificent factories at Belper, Mr. Strutt sought to invert the natural order of ventilation, making the influx of fresh warm air to be near the ceiling of the rooms, and the efflux of used air near the bottom. This arrangement, which is nearly fifty years old in this country, has been just imported as a novelty by M. Bernhardt. He has, in like manner, imported the ancient plan of a subterranean conduit for supplying cold air to the bottom of stoves, which has been familiarly known to every man of science for a century at least; which was the foundation of Mr. Strutt's plan of ventilation, and is figured in the first plate of Gren's *Elements of Chemistry*, published at London in 1800.

With regard to the downward circulation of air, every sound physiologist will deprecate it as a noxious fallacy. The mephitic exhalations from our lungs, having a temperature of 98°, rise and occupy the upper part of the room; and, if forced downwards by any means, must inevitably be breathed again and again by its inmates before their particles can be discharged at the level of their legs or feet, in violation of the laws of specific gravity. Where parsimony of fuel is the sole object and boast of an empiric, this retrograde circulation may be rendered specious, and is certainly better than the aerial stagnation in German or Russian apartments; but, where health and comfort are primary considerations, we should so regulate the circulation as that none of the air vitiated by our lungs should ever enter them

again. This point can be secured only by leaving the rarefied exhalations to follow their natural upward direction; recollecting, moreover, that moist air is lighter than dry air of the same temperature.

It may be admitted, as a general principle, that the comfort of sedentary individuals, occupying large apartments during the winter months, cannot be adequately secured by the mere influx of hot air from separate stove-rooms: it requires the general influence of radiating surfaces in the apartments themselves, such as of open fires, of pipes or other vessels filled with hot water or steam. The clothing of our bodies, exposed to such radiation in a pure, fresh, somewhat cool and bracing air, absorbs a much more agreeable warmth than it could acquire by being merely immersed in an atmosphere heated even to 62° Fahr., like that of the Long Room. In the former predicament, the lungs are supplied with a relatively dense air, say at 52° Fahr.; while the external surface of the body or the clothing is maintained at, perhaps, 70° or 75°. This distinctive circumstance has not, I believe, been hitherto duly considered by the stove doctors, each intent on puffing his own pecuniary interest; but it is obviously one of great importance, and which the English people would do well to keep in view; because it is owing to our domestic apartments being heated by open fires, and our factories by steam pipes, that the health of our population, and the expectation of life among all orders in this country, is so much better than in France and Germany, where hot-air stoves, neither agreeable nor inoffensive, and in endless variety of form, are generally employed.

Reverting more particularly to M. Bernhardt's furnaces at Lord King's, we find in one of them 16 pipes, 9 in. in diameter, or 28 in. in circumference, and 18 ft. long; presenting, therefore, the enormous surface of 472 square feet. We must bear in mind that these are the dimensions of only one of the four stove furnaces in his Lordship's house. Taking all together, there is enough of iron surface, were it judiciously employed, to warm the vast area of St. Paul's or Westminster Abbey.

When I last visited these constructions of the architect from Saxony, as M. Bernhardt styles himself in his letter to the Hon. Commissioners, his noble employer, who was then in occupation with his family, very politely showed me the whole arrangement of the stoves, but told me he meant to employ them chiefly in seasoning the house during his absence in the country; and I found, in fact, that none of the stoves were heated upon that occasion.

The smoke, in circulating through the zig-zag pipes, deposits nearly the whole of its soot; so that, when coal is burnt in the fireplaces, the manufacture of soot in the apparatus must be

prodigious, and the necessity of removing it of frequent recurrence. To have such a vast magazine of soot in the heart of a noble mansion can be neither comfortable nor safe. As the sheet-iron pipes readily crack and corrode, the stench of the soot will be apt to transpire; or it may get inflamed, in which case it might set the house on fire. One of the smoke mains (pipes) crosses the ceiling of the passage in the under-ground story in a very awkward manner, passing into a soot-chamber closed with a hinged iron door of portentous aspect.

In conclusion, I take leave to state to you my firm conviction that the only method of warming your Long Room and subsidiary apartments, combining salubrity, safety, and economy, with convenience in erection and durable comfort in use, is by a series of steam pipes laid along the floor, at the line of the desk partitions, in suitable lengths, with small arched junction-pipes rising over the several doorways, to keep the passage clear, and at the same time to allow a free expansion and contraction in the pipes, thereby providing for the permanent soundness of the joints.

Should the Hon. Board think fit to entrust me with superintending the erection of a system of heating the Long Room, &c., I engage to place it in the hands of a skilful practical engineer, who will do it in the best manner, and upon the most reasonable terms: I shall, moreover, hold myself responsible for its answering all the desirable purposes above indicated.

I do not think that any moderate number of open fire-grates will be adequate to heat the Long Room during the winter months, when the air from the adjoining banks of the Thames is so extremely chilly, damp, and unwholesome. This mode, moreover, would be extremely wasteful of fuel.

From his second letter to the Hon. Board, which you have just forwarded to me, it would appear that M. Bernhardt has been permitted to operate upon the committee-rooms of the House of Commons. Having had an opportunity, during a long interview which he lately bestowed upon me, of assuring myself that he is very slenderly acquainted with either the physical or chemical principles of heating and ventilating apartments, I have not deemed it worth while to inspect his recent operations. If stupor, headach, and disease have been occasioned by the air-ovens in the Custom House, they cannot fail to be produced in an aggravated form by the torrefying pipe-range of M. Bernhardt. Should the members of our legislature suffer their health and comfort to be compromised by such astute empiricism, we may expect to see as rapid a round of elections as any partisan of annual parliaments could desire; for certainly, if subterraneous furnaces, like those at Lord King's mansion, be set in action under the Houses of Parliament, a blow may be inflicted upon

the heads of the nation, which shall throw the machinations of Guy Fawkes into the shade.

To those unversed in the mysteries of jobbing, the employment of M. Bernhardt upon the committee-rooms, to the exclusion of many more capable native engineers, must excite surprise. But, alas! daily experience shows how easily any imposture may gull the English public for a season, however false the purpose or foolish the scheme, provided a joint-stock machine can be get up, which, like a monster polypus, projects its *tentacula*, *feelers*, and *suckers* upon every object with reckless avidity. Such an association seldom scruples to use bribes, flattery, or threats to compass its mercenary ends. Thus, the prime functionary of this German stove society had the hardihood to tell me, in my own house, that, if I made an unfavourable report concerning it to the Board of Customs, he would employ Mr. Faraday to refute me, and write a certificate in its favour. In the same modest strain, he asserted, that Bernhardt's plan of ventilation was founded upon principles which no philosopher in this country did (or could) understand. As one of the humblest but not least zealous disciples of science, I acknowledge myself incapable of discovering either the novelty or worth of the scheme.

I am, my dear Sir, yours most faithfully,

ANDREW URE.

18. *Charlotte Street, Bedford Square, Nov.* 23. 1837.

The old and-well known plan of heating buildings by means of several ranges of nearly horizontal pipes, placed in a brick oven, and subjected upon one of their surfaces to the aerial products of combustion, and upon the other to atmospheric air, is fully described, with illustrative engravings, in the *Dictionnaire Technologique*, under the article "Chaleur," published in the year 1823.

"The *calorifères* of great establishments," says M. Payen, the author of the article, "consisting, usually, of cylindrical cast-iron pipes, built up in a brick furnace, are placed in a cellar (*cave*) under the premises. This distribution is convenient, as we do not embarrass the upper floor; but we suffer a loss of the heat communicated to the massive walls round the furnace. In order to diminish this loss as much as possible, we ought to erect the *calorifère* in some underground suite of apartments, which require warming, leaving only the mouth of the furnace on the outside of the house, for the convenience of firing.

"Plate xii. (*fig.* 7.), *Arts Chimiques*, represents one of these *calorifères* cut by a plane perpendicular to all the axes of the cylinders. We see that the products of combustion developed in the fireplace pass under the first range of cylinders, rise between the first and second range, then between the second and

third, next between the third and fourth, and so on till they escape above the uppermost range, under the brick arch, to reach the chimney. This vertical chimney, composed of copper pipes, gives off heat to all the apartments which it traverses in its way to the roof of the building.

"*Fig.* 8. is the same *calorifère*, cut by a plane in the axis of the four ranges of pipes, and shows the direction of the currents of hot air in the interior of these cylinders. The atmospheric air enters by the lowest orifice: it is conducted by recesses left in the brickwork from one row of pipes to another; it thus circulates in the zig-zag directions indicated by the arrows, till it enters the copper pipes which conduct the warm air to the upper floors. The air rises, obviously, by virtue of its relative lightness, and thus occasions a current which continues as long as there is heat in the fire.

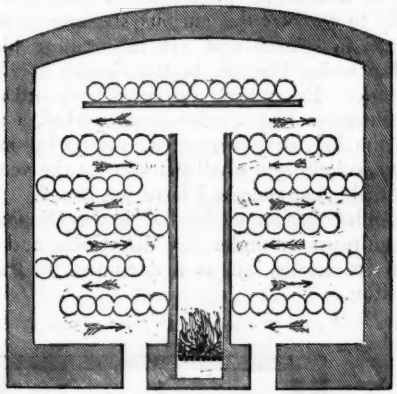
"The *calorifère* just described affords a great supply of heat, if the fire be active and the current of air rapid; but, to deprive the products of combustion more completely of the heat, which they are apt to carry off in waste, we may render the warming of the air more methodical, by introducing the external atmosphere round the warm pipes at the top, near to their entrance into the chimney, and lead it successively downwards over all the horizontal pipes, in the inverse direction of the current of burned air; just as, in the double still-worms, we make the cooling water circulate upwards, while the condensing vapours circulate downwards. By this method, the atmospherical air, during its whole progress, strips the pipes of their heat with the utmost possible energy; since it becomes progressively hotter, and is always cooler, at every point of its course, than the surfaces of the pipes with which it comes in contact; and since the transmission of the heat through the metal is proportional to the difference of the temperature of the inside and outside. If, on the contrary, the internal and external currents proceeded in the same direction, the temperature would differ but slightly in many places; or, it might be even hotter outside than inside; and, consequently, the transmission of the heat would be nearly null in those places, or it might be, at times, even opposite to what we wish to obtain."

Mr. Payen then proceeds to describe the construction of a stove free from the vices which he has just pointed out, one which appears capable of employing, as usefully as possible, the heat disengaged by the fuel. Into the details of this stove I shall not enter, as its sole object is economy, without reference to the temperature of the pipes by which the atmospheric air is to be heated. From the experience of the gentlemen in the Long Room of the Custom House, and in many counting-houses in the city, where arid stoves have lately been erected, it appears certain that air exposed to metallic surfaces, heated beyond a certain pitch, ac-

quires most insalubrious properties, and becomes capable of inducing an apoplectic condition of the brain in persons plunged into and breathing it.

In my former paper, published in this Magazine for April last, (Vol. IV. p. 162.), I have endeavoured to explain the rationale of the injurious action of such air upon the living system. Every pathologist will tell us that changes in the condition of the atmosphere, altogether inappreciable by chemical and physical tests, are frequent causes of the most formidable and fatal maladies: witness the malaria of the Campagna of Rome, of many places in the West Indies peculiarly subject to yellow fever, of cholera, influenza, typhus fever, and scarlet fever, &c. Not only such alarming epidemics, the *nova cohors febrium*, but many obscure chronic derangements of health, are produced by apparently slight changes in the constitution of the air of our apartments. Three years ago, I erected, in a spacious bedroom of my own house, a stove, which was never heated so high as the boiling point of water, but which allowed no circulation of air by the chimney, except the small quantity which was admitted very near the hearth-stone, for supporting a slow combustion in the fuel. Every thing seemed comfortably and philosophically arranged. The temperature of my room was nearly the same night and day; being, upon an average, from 55° to 60° Fahr. In a short time, however, my natural vigour of body and mind began to give way; my sleep became disturbed; my appetite declined; a furious cough, with pains in the chest, supervened, without having been preceded, however, by any of the usual symptoms of catarrh; and my bowels were obstinately constipated. For this general distemperature, which continued for several months, my kind medical friends prescribed a vast variety of remedies; such as blood-letting, blistering, cupping, expectorants, antispasmodics, emetics, diaphoretics, mercurial alteratives, &c.; a pharmaceutical ordeal which I underwent without any material benefit. At length, I discovered that the main cause of these disordered functions was a peculiar state of the blood, caused by breathing an atmosphere not sufficiently renewed, in consequence of a nearly air-tight stove apparatus. I now caused the stove to be removed, fire to be rekindled in the open grate; took a strong dose of purgative medicine, to restore the hepatic secretions; and, within three days of this change of plan, I felt myself a new being; the powers of my body and mind resumed their wonted alacrity; in which state, thank God, they have ever since remained, owing, chiefly, I have no doubt, to unembarrassed ventilation in every part of my house, and the suppression of stove-malaria. To render such arid stoves as little as possible insalubrious, we should remove to the greatest distance from the fire the row of pipes upon which the aerial products of combustion first impinge; protecting them, also, from

the direct contact of the burned air by a bed of fire-tiles, upon the same principle as the gas retorts are now generally mounted. We should also imitate the modern mode of arranging the fire-flues in the gas-works, so as to make the burned air first act upon the top range of retorts in each furnace; thence circulate obliquely downwards, and be discharged into the chimney, below the level of the bottom of the lowest range. By this method, an economy of from two thirds to three fourths of the fuel has been obtained over the former plan of letting the products of combustion escape at the top of the furnace, above the uppermost retort. *Fig.* 10.



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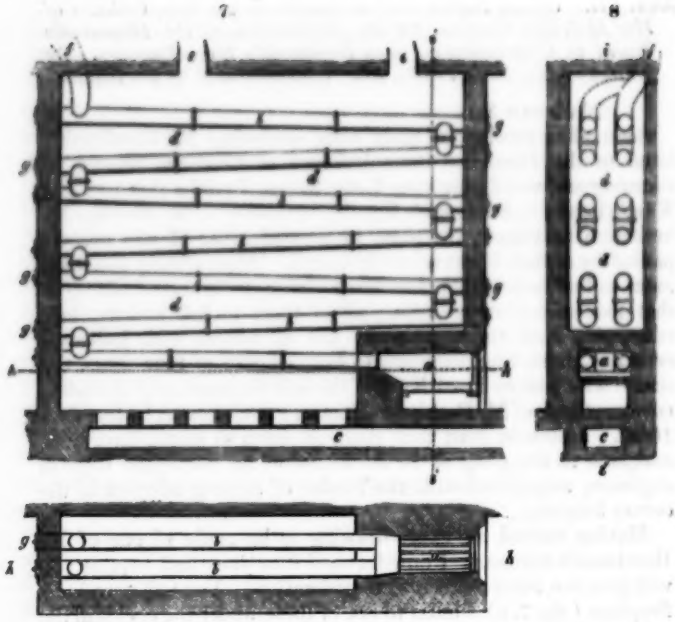
is a cross section of such a stove. I shall furnish a detailed description of it, for the next Number of your Journal.

In the Number of this Magazine for September, 1835 (Vol. II. p. 407.), there is a well-written paper, by Censor, upon the comparative advantages and disadvantages of the various modifications of the hot-water system of warming apartments. With his judicious statements and reasonings my views entirely coincide. It is a remarkable fact, that the inventor of that system, M. Bonnemain, whose acquaintance I had the pleasure of making, upwards of twenty years ago, in Paris, had erected it near that capital prior to the French revolution, and in, probably, a more complete form than it has been ever since, either in his own country or in this. His water-stove is described, under the article "Chaleur," in the *Dictionnaire Technologique*, published in 1823, quoted from above; and is not only economical in fuel in the highest degree, but is provided with an ingenious mechanism of expanding bars, on the principle of Harrison's gridiron pendulum, for regulating the admission of air under the grate, and thereby the vivacity of the combustion. The best test of the excellence of his arrangements was, the success



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English, you would get out of the frying-pan into the fire. There is, moreover, not the slightest novelty in M. Bernhardt's arrangement; zig-zag pipes, laid at various slopes, having been commonly used in England, France, Germany, &c., for upwards of a century past; and, indeed, the very scheme of enclosing them in a hot-air chamber is represented in books upon stove-heating, in my possession.

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M. Bernhardt has since sought to account for these *terrifying* results by saying that the fires in his stoves were then forced, in order to dry the plaster-work of the house. I grant that this may be so far true; for, undoubtedly, Lord King's family could not have endured that offensive burnt air for even half a day. Still, it is evident from these experimental facts, as well as from the construction of the furnace itself, that the least over-firing, from negligence of the servants, must communicate ignition to the sheet-iron pipe immediately connected with it; and that this pipe, so overheated, will taint all the air which passes over it. Upon Sylvester's cockle plan, as erected at the Custom House, the temperature of the hollow iron pyramid, against which the cold air impinges, is much more susceptible of regulation than the lower pipes of M. Bernhardt's scheme. Indeed, I consider Sylvester's plan, as originally constructed by William Strutt, Esq., of Derby, to be the least objectionable of all known arid-air furnaces.

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With regard to the downward circulation of air, every sound physiologist will deprecate it as a noxious fallacy. The mephitic exhalations from our lungs, having a temperature of 98°, rise and occupy the upper part of the room; and, if forced downwards by any means, must inevitably be breathed again and again by its inmates before their particles can be discharged at the level of their legs or feet, in violation of the laws of specific gravity. Where parsimony of fuel is the sole object and boast of an empiric, this retrograde circulation may be rendered specious, and is certainly better than the aerial stagnation in German or Russian apartments; but, where health and comfort are primary considerations, we should so regulate the circulation as that none of the air vitiated by our lungs should ever enter them

again. This point can be secured only by leaving the rarefied exhalations to follow their natural upward direction; recollecting, moreover, that moist air is lighter than dry air of the same temperature.

It may be admitted, as a general principle, that the comfort of sedentary individuals, occupying large apartments during the winter months, cannot be adequately secured by the mere influx of hot air from separate stove-rooms: it requires the general influence of radiating surfaces in the apartments themselves, such as of open fires, of pipes or other vessels filled with hot water or steam. The clothing of our bodies, exposed to such radiation in a pure, fresh, somewhat cool and bracing air, absorbs a much more agreeable warmth than it could acquire by being merely immersed in an atmosphere heated even to 62° Fahr., like that of the Long Room. In the former predicament, the lungs are supplied with a relatively dense air, say at 52° Fahr.; while the external surface of the body or the clothing is maintained at, perhaps, 70° or 75°. This distinctive circumstance has not, I believe, been hitherto duly considered by the stove doctors, each intent on puffing his own pecuniary interest; but it is obviously one of great importance, and which the English people would do well to keep in view; because it is owing to our domestic apartments being heated by open fires, and our factories by steam pipes, that the health of our population, and the expectation of life among all orders in this country, is so much better than in France and Germany, where hot-air stoves, neither agreeable nor inoffensive, and in endless variety of form, are generally employed.

Reverting more particularly to M. Bernhardt's furnaces at Lord King's, we find in one of them 16 pipes, 9 in. in diameter, or 28 in. in circumference, and 18 ft. long; presenting, therefore, the enormous surface of 472 square feet. We must bear in mind that these are the dimensions of only one of the four stove furnaces in his Lordship's house. Taking all together, there is enough of iron surface, were it judiciously employed, to warm the vast area of St. Paul's or Westminster Abbey.

When I last visited these constructions of the architect from Saxony, as M. Bernhardt styles himself in his letter to the Hon. Commissioners, his noble employer, who was then in occupation with his family, very politely showed me the whole arrangement of the stoves, but told me he meant to employ them chiefly in seasoning the house during his absence in the country; and I found, in fact, that none of the stoves were heated upon that occasion.

The smoke, in circulating through the zig-zag pipes, deposits nearly the whole of its soot; so that, when coal is burnt in the fireplaces, the manufacture of soot in the apparatus must be

prodigious, and the necessity of removing it of frequent recurrence. To have such a vast magazine of soot in the heart of a noble mansion can be neither comfortable nor safe. As the sheet-iron pipes readily crack and corrode, the stench of the soot will be apt to transpire; or it may get inflamed, in which case it might set the house on fire. One of the smoke mains (pipes) crosses the ceiling of the passage in the under-ground story in a very awkward manner, passing into a soot-chamber closed with a hinged iron door of portentous aspect.

In conclusion, I take leave to state to you my firm conviction that the only method of warming your Long Room and subsidiary apartments, combining salubrity, safety, and economy, with convenience in erection and durable comfort in use, is by a series of steam pipes laid along the floor, at the line of the desk partitions, in suitable lengths, with small arched junction-pipes rising over the several doorways, to keep the passage clear, and at the same time to allow a free expansion and contraction in the pipes, thereby providing for the permanent soundness of the joints.

Should the Hon. Board think fit to entrust me with superintending the erection of a system of heating the Long Room, &c., I engage to place it in the hands of a skilful practical engineer, who will do it in the best manner, and upon the most reasonable terms: I shall, moreover, hold myself responsible for its answering all the desirable purposes above indicated.

I do not think that any moderate number of open fire-grates will be adequate to heat the Long Room during the winter months, when the air from the adjoining banks of the Thames is so extremely chilly, damp, and unwholesome. This mode, moreover, would be extremely wasteful of fuel.

From his second letter to the Hon. Board, which you have just forwarded to me, it would appear that M. Bernhardt has been permitted to operate upon the committee-rooms of the House of Commons. Having had an opportunity, during a long interview which he lately bestowed upon me, of assuring myself that he is very slenderly acquainted with either the physical or chemical principles of heating and ventilating apartments, I have not deemed it worth while to inspect his recent operations. If stupor, headach, and disease have been occasioned by the air-ovens in the Custom House, they cannot fail to be produced in an aggravated form by the torrefying pipe-range of M. Bernhardt. Should the members of our legislature suffer their health and comfort to be compromised by such astute empiricism, we may expect to see as rapid a round of elections as any partisan of annual parliaments could desire; for certainly, if subterraneous furnaces, like those at Lord King's mansion, be set in action under the Houses of Parliament, a blow may be inflicted upon

the heads of the nation, which shall throw the machinations of Guy Fawkes into the shade.

To those unversed in the mysteries of jobbing, the employment of M. Bernhardt upon the committee-rooms, to the exclusion of many more capable native engineers, must excite surprise. But, alas! daily experience shows how easily any imposture may gull the English public for a season, however false the purpose or foolish the scheme, provided a joint-stock machine can be get up, which, like a monster polypus, projects its *tentacula*, *feelers*, and *suckers* upon every object with reckless avidity. Such an association seldom scruples to use bribes, flattery, or threats to compass its mercenary ends. Thus, the prime functionary of this German stove society had the hardihood to tell me, in my own house, that, if I made an unfavourable report concerning it to the Board of Customs, he would employ Mr. Faraday to refute me, and write a certificate in its favour. In the same modest strain, he asserted, that Bernhardt's plan of ventilation was founded upon principles which no philosopher in this country did (or could) understand. As one of the humblest but not least zealous disciples of science, I acknowledge myself incapable of discovering either the novelty or worth of the scheme.

I am, my dear Sir, yours most faithfully,

ANDREW URE.

13. *Charlotte Street, Bedford Square, Nov.* 23. 1837.

The old and-well known plan of heating buildings by means of several ranges of nearly horizontal pipes, placed in a brick oven, and subjected upon one of their surfaces to the aerial products of combustion, and upon the other to atmospheric air, is fully described, with illustrative engravings, in the *Dictionnaire Technologique*, under the article "Chaleur," published in the year 1823.

"The *calorifères* of great establishments," says M. Payen, the author of the article, "consisting, usually, of cylindrical cast-iron pipes, built up in a brick furnace, are placed in a cellar (*cave*) under the premises. This distribution is convenient, as we do not embarrass the upper floor; but we suffer a loss of the heat communicated to the massive walls round the furnace. In order to diminish this loss as much as possible, we ought to erect the *calorifère* in some underground suite of apartments, which require warming, leaving only the mouth of the furnace on the outside of the house, for the convenience of firing.

"Plate xii. (*fig.* 7.), *Arts Chimiques*, represents one of these *calorifères* cut by a plane perpendicular to all the axes of the cylinders. We see that the products of combustion developed in the fireplace pass under the first range of cylinders, rise between the first and second range, then between the second and

third, next between the third and fourth, and so on till they escape above the uppermost range, under the brick arch, to reach the chimney. This vertical chimney, composed of copper pipes, gives off heat to all the apartments which it traverses in its way to the roof of the building.

"*Fig.* 8. is the same *calorifère*, cut by a plane in the axis of the four ranges of pipes, and shows the direction of the currents of hot air in the interior of these cylinders. The atmospheric air enters by the lowest orifice: it is conducted by recesses left in the brickwork from one row of pipes to another; it thus circulates in the zig-zag directions indicated by the arrows, till it enters the copper pipes which conduct the warm air to the upper floors. The air rises, obviously, by virtue of its relative lightness, and thus occasions a current which continues as long as there is heat in the fire.

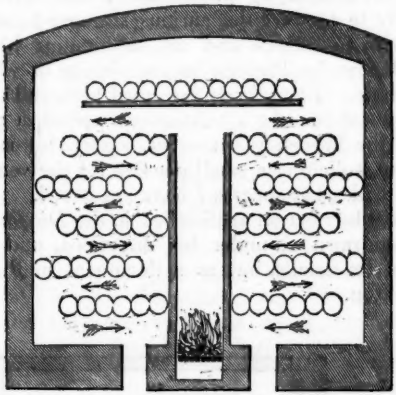
"The *calorifère* just described affords a great supply of heat, if the fire be active and the current of air rapid; but, to deprive the products of combustion more completely of the heat, which they are apt to carry off in waste, we may render the warming of the air more methodical, by introducing the external atmosphere round the warm pipes at the top, near to their entrance into the chimney, and lead it successively downwards over all the horizontal pipes, in the inverse direction of the current of burned air; just as, in the double still-worms, we make the cooling water circulate upwards, while the condensing vapours circulate downwards. By this method, the atmospherical air, during its whole progress, strips the pipes of their heat with the utmost possible energy; since it becomes progressively hotter, and is always cooler, at every point of its course, than the surfaces of the pipes with which it comes in contact; and since the transmission of the heat through the metal is proportional to the difference of the temperature of the inside and outside. If, on the contrary, the internal and external currents proceeded in the same direction, the temperature would differ but slightly in many places; or, it might be even hotter outside than inside; and, consequently, the transmission of the heat would be nearly null in those places, or it might be, at times, even opposite to what we wish to obtain."

Mr. Payen then proceeds to describe the construction of a stove free from the vices which he has just pointed out, one which appears capable of employing, as usefully as possible, the heat disengaged by the fuel. Into the details of this stove I shall not enter, as its sole object is economy, without reference to the temperature of the pipes by which the atmospheric air is to be heated. From the experience of the gentlemen in the Long Room of the Custom House, and in many counting-houses in the city, where arid stoves have lately been erected, it appears certain that air exposed to metallic surfaces, heated beyond a certain pitch, ac-

quires most insalubrious properties, and becomes capable of inducing an apoplectic condition of the brain in persons plunged into and breathing it.

In my former paper, published in this Magazine for April last, (Vol. IV. p. 162.), I have endeavoured to explain the rationale of the injurious action of such air upon the living system. Every pathologist will tell us that changes in the condition of the atmosphere, altogether inappreciable by chemical and physical tests, are frequent causes of the most formidable and fatal maladies: witness the malaria of the Campagna of Rome, of many places in the West Indies peculiarly subject to yellow fever, of cholera, influenza, typhus fever, and scarlet fever, &c. Not only such alarming epidemics, the *nova cohors febrium*, but many obscure chronic derangements of health, are produced by apparently slight changes in the constitution of the air of our apartments. Three years ago, I erected, in a spacious bedroom of my own house, a stove, which was never heated so high as the boiling point of water, but which allowed no circulation of air by the chimney, except the small quantity which was admitted very near the hearth-stone, for supporting a slow combustion in the fuel. Every thing seemed comfortably and philosophically arranged. The temperature of my room was nearly the same night and day; being, upon an average, from 55° to 60° Fahr. In a short time, however, my natural vigour of body and mind began to give way; my sleep became disturbed; my appetite declined; a furious cough, with pains in the chest, supervened, without having been preceded, however, by any of the usual symptoms of catarrh; and my bowels were obstinately constipated. For this general distemperature, which continued for several months, my kind medical friends prescribed a vast variety of remedies; such as blood-letting, blistering, cupping, expectorants, antispasmodics, emetics, diaphoretics, mercurial alteratives, &c.; a pharmaceutical ordeal which I underwent without any material benefit. At length, I discovered that the main cause of these disordered functions was a peculiar state of the blood, caused by breathing an atmosphere not sufficiently renewed, in consequence of a nearly air-tight stove apparatus. I now caused the stove to be removed, fire to be rekindled in the open grate; took a strong dose of purgative medicine, to restore the hepatic secretions; and, within three days of this change of plan, I felt myself a new being; the powers of my body and mind resumed their wonted alacrity; in which state, thank God, they have ever since remained, owing, chiefly, I have no doubt, to unembarrassed ventilation in every part of my house, and the suppression of stove-malaria. To render such arid stoves as little as possible insalubrious, we should remove to the greatest distance from the fire the row of pipes upon which the aerial products of combustion first impinge; protecting them, also, from

the direct contact of the burned air by a bed of fire-tiles, upon the same principle as the gas retorts are now generally mounted. We should also imitate the modern mode of arranging the fire-flues in the gas-works, so as to make the burned air first act upon the top range of retorts in each furnace; thence circulate obliquely downwards, and be discharged into the chimney, below the level of the bottom of the lowest range. By this method, an economy of from two thirds to three fourths of the fuel has been obtained over the former plan of letting the products of combustion escape at the top of the furnace, above the uppermost retort. *Fig.* 10.



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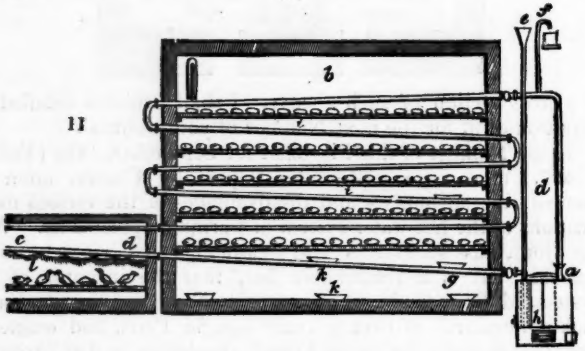
is a cross section of such a stove. I shall furnish a detailed description of it, for the next Number of your Journal.

In the Number of this Magazine for September, 1835 (Vol. II. p. 407.), there is a well-written paper, by Censor, upon the comparative advantages and disadvantages of the various modifications of the hot-water system of warming apartments. With his judicious statements and reasonings my views entirely coincide. It is a remarkable fact, that the inventor of that system, M. Bonnemain, whose acquaintance I had the pleasure of making, upwards of twenty years ago, in Paris, had erected it near that capital prior to the French revolution, and in, probably, a more complete form than it has been ever since, either in his own country or in this. His water-stove is described, under the article "Chaleur," in the *Dictionnaire Technologique*, published in 1823, quoted from above; and is not only economical in fuel in the highest degree, but is provided with an ingenious mechanism of expanding bars, on the principle of Harrison's gridiron pendulum, for regulating the admission of air under the grate, and thereby the vivacity of the combustion. The best test of the excellence of his arrangements was, the success

of his *poussinières*, or nurseries, warmed by hot-water circulation, for hatching eggs and rearing chickens, in such numbers as to supply, in a considerable measure, the Parisian market. This ingenious and profitable establishment, in which he had embarked his little fortune, fell a sacrifice to those disastrous times. When I knew him, he was occupied in giving private instructions relative to the construction of hot-water stoves, and *artificial incubation*. He was then a stout hale man, about seventy-two years of age, of the most amiable complacency of manners, and well acquainted with all the interesting inventions of the day. Many an instructing promenade I had with him. He was ever ready to conduct the curious stranger to see whatever was most novel in science and art, terminating his round of visits at the Jardin des Plantes, in the vicinity of which he had his humble abode. Every body esteemed him, and sympathised with his misfortunes. At a subsequent period, a petition was presented to the French government, signed by many distinguished savans, soliciting a small pension for the venerable *octogenaire;* but with what success I have not heard.

The article "Incubation artificielle," in the *Dictionnaire Technologique*, was drawn up under his directions, and is not only valuable from its details, but as a document in the history of *calorific* invention.



The water-boiler is shown at *h*, with the expansion rod, which regulates the air-door of the ash-pit: *a* is a stopcock for modifying the opening by which the hotter particles of water ascend; *d* is the water-pipe of communication, having the heating-pipe of distribution (*b*) attached to it; which thence passes backwards and forwards at *i* and *k*, with a very slight slope from the horizontal direction, through the *poussinière*. It traverses this apartment, and returns by *g* to the orifice of the boiler, where it turns vertically downwards, and descends to nearly the bottom

of the boiler at *h*, discharging at that point the cooler, and therefore denser, particles of water; which displace, by gravity, those which, at *a*, are continually pressed upwards: *e h* is a tube surmounted with a funnel, for keeping the range of pipes always full of water; and *f* is a siphon orifice for the escape of the disengaged air, which would otherwise be apt to occupy the tubes partially, and thus obstruct the locomotion of the aqueous particles.

The faster the water gets cooled in the serpentine tubes, the quicker its circulation will be; because the difference of density between the water in the ascending and descending legs of the system (viewed as two vertical columns) which is the sole cause of its movement, will be greater. *k g* represent small saucers filled with water, which supply the requisite moisture to the heated air, so as to place the eggs (arranged in a series of trays) in a humid atmosphere, similar to that under the body of the hen.

When we wish to hatch eggs with this apparatus, the fire is to be kindled in the boiler; and, as soon as the temperature has risen to about 100° Fahr., the eggs are introduced, but only one twentieth of the total number intended, upon the first day; next day, a like number is laid upon the trays, and thus in succession for twenty days; so that upon the twenty-first day the greater part of the eggs first placed may be hatched, and that we may obtain daily afterwards an equal number of chicks. Regularity of care is thus established in rearing these tender animals.

During the first days of incubation, natural as well as artificial, a small portion of the water contained in the eggs evaporates through the shell, and is replaced by a like quantity of air, which is afterwards useful for the respiration of the animal. If the warm atmosphere surrounding the eggs were very dry, such a portion of their aqueous matter would exhale through the pores of the shells as would endanger the future life of the chick *in ovo*. The transpiration from the body of the hen, as she broods over the eggs, generally conteracts this desiccation; but, notwithstanding, in very dry weather, many hatching eggs fail from that cause, unless they be placed in moist decomposing straw. The water-saucers (*k g*) are therefore essential to success in artificial incubation.

Any one who considers the preceding description will be satisfied that M. Bonnemain, upwards of fifty years ago, had erected the hot-water system of warming apartments, in the most philosophical, judicious, and economical manner. The Marquis de Chabannes seems to have done nothing but pirate his plans, and disfigure them so as to make them pass for his own.

Whatever mode of heating be adopted, with a view to economy, in lofty public buildings, where there is abundance of air,

we should never suffer our domestic apartments to be warmed by a stove, to the suppression of our open fires; which, when well constructed upon the Rumford plan of radiation, give the most comfortable quality of warmth, with complete change of atmosphere.

REVIEWS.

ART. I. *Prolusiones Architectonicæ; or, Essays on Subjects connected with Grecian and Roman Architecture.* By William Wilkins, A.M., R.A., F.R.S., formerly a senior Fellow of Caius College, in the University of Cambridge; Regius Professor of Architecture in the Royal Academy. Part I. 4to, 14 plates.

THE first essay in this learned work is on the Erectheum, an edifice of Athens of the highest antiquity, which derived its appellation from the sixth king Erectheus, who died B. C. 1347.

"This temple was constructed on a site hallowed by all the mythological associations which connected this favoured city with its divine protectress. On this spot, according to tradition, the truth of which it would have been impiety to question, the preternatural demonstrations of power exhibited by Minerva and Neptune, in their contest for the tutelary guardianship of Attica, were indelibly implanted, and hence became objects of the greatest devotion. The spring of salt water which issued from the earth when struck by the trident of Neptune, and the sacred olive which took root in the rocky soil by the rival act of the goddess, were enshrined in a building constructed over them for their shelter and protection."

Herodotus states that, "on the occupation of the citadel by the Persians, this temple, together with the other sacred edifices of the Acropolis, was burned; meaning, probably, that the roof and all the combustible portions of the building were then destroyed, although the walls must have been left standing. On the following day, some Athenian refugees who accompanied the invader, were permitted to perform their religious rites in the half-consumed temple; and on this occasion it was discovered that the sacred olive not only had escaped destruction, but that it had sent forth new and vigorous shoots." This induced the Athenians, when left at liberty by the absence of the invaders, to commence rebuilding the temple, which was reerected by the architect Philocles; and, in the 92d Olympiad, it wanted little more than the roof to be complete. Strabo, about 400 years after the Persian invasion, mentions this temple; and it has been supposed (though it is by no means certain) that Xenophon alludes to it in describing the destruction by fire of a very ancient temple of Minerva. Pausanias also mentions the destruction by fire of the temple of Minerva-Alea, about this time. Mr. Wilkins, however, con-

cludes that the temple mentioned by these two authors was that of Minerva at Tegea, and not the Erectheum.

The plates of this edifice are, 1. Plan of the Erectheum; 2. Elevation of the Portico of the Temple of Minerva-Pallas; 3. Elevation of the Portico of the Pandroseum; 4. The Orders of the Columns; 5. Details of the Roof of the Erectheum; 6. Details of the Roof and Pediments; 7. Plan and Appropriation of the Erectheum, with a plan of one of the Angles of the Roof, and a Section through the Entablature of the Parthenon; 8. The Western Front of the Pandroseum; 9. The South Front of the Erectheum; 10. Elevation of the North Side of the Temple. 11. Transverse Section through the Pronaos of the Pandroseum. 12. Elevation of the North Wall of the Stoa of the Pandroseum; 13. Details of the Thyroma; 14. The Mouldings of the Hyperthyrum enlarged.

The author next treats of the Athenian inscription, of which he observes, that "this remarkable document, relating to one of the most celebrated temples on the Acropolis at Athens, possesses no ordinary degree of interest, from the circumstance of its being not only singular in its kind, but from its connexion with a building of which there are several portions still in existence. It abounds in architectural terms, some of which are obsolete; and others whose application to the different parts of the building can only be understood by those who possess an accurate and practical knowledge of the construction of Grecian temples, and particularly of the roofs and superstructures; a knowledge which has only reached us through the means of recent architectural publications."

The Construction of the Roofs of Temples forms the next essay. It was first printed in the *Unedited Antiquities of Attica*, edited for the Society of Dilettanti, and is now republished in a cheaper form. "Among the omissions of Vitruvius, he has neglected to inform us of the mode followed by Greek architects in roofing their temples. He mentions two kinds of framed timbers in common use, as the span of the roof was of greater or less extent; but of the construction of the simæ, or gutters, and the covering of the roof itself, he is altogether silent."

The last essay is one endeavouring to prove that the Temple at Jerusalem is the type of Grecian architecture. "The arrangement and the dimensions of the Jewish Temple," Mr. Wilkins observes, "are given so much at length in the Sacred Writings, that we are enabled to ascertain its size and ichnography with a great degree of precision; and I shall now proceed to show that a very extraordinary coincidence, both in proportion and in actual dimensions, existed between this and the temple at Pæstum, that could only have originated in the intention of the projectors of the latter to adopt the other as their model, and

to adhere to it with as much precision as was consistent with the observance of different forms of worship in the two nations. We shall find, therefore, that the variation chiefly consists in those parts essential to the one, and unnecessary in the other; or, to speak with greater precision, between the sanctuary of the Jewish temple and the posticum of the Grecian."

ART. II. *Mechanics for Practical Men.* By Alexander Jamieson, LL.D., Author of a "Dictionary of Mechanical Science," and a "Treatise on the Elements of Algebra."

WE are most anxious to recommend this work to the study of the young architect, as by far the most important subject with which he can be occupied. There are minds capable of attaining a considerable degree of eminence in architecture as a fine art, without being at all competent to demonstrate either the strength or weakness of any building which they design. Ought such persons to be allowed to practise as architects? We say, decidedly, No. There ought to be an institution for the examination of young students practising architecture, analogous to that which exists for examining young candidates for practising medicine; and, should such an institution be formed, it will be wondered by posterity that large sums should ever have been entrusted to be laid out in building, to persons who have no other merit than that of being able to make fine drawings. That this is the case with many young architects, we can assert to be the case from our own knowledge and observation.

"If we desired a text-book for public instruction, upon the composition and resolution of forces," says Dr. Jamieson, "where shall we find a popular treatise combining the means with the end for such a laudable undertaking? We speak with deference, when we affirm that there is no treatise, except the one we produce, that embraces, to the same extent, and in such varied application, the twofold properties of precept and example in this important problem of the parallelogram of forces." (p. ix.)

ART. III. *A practical Treatise on Warming Buildings by Hot Water; and an Inquiry into the Laws of radiant and conducted Heat: to which are added, Remarks on Ventilation, and on the various Methods of distributing artificial Heat, and their Effects on Animal and Vegetable Physiology.* By Charles Hood, F.R.A.S. 8vo, pp. 216, and numerous Woodcuts.

THERE are very few subjects that architects and builders know less about than that of heating by hot water. As to the employers of this mode of heating, their ignorance on the subject is obvious from the dangerous methods which they adopt. Even the dangers attendant upon a common close boiler are not generally understood. As, however, we intend to review this book at

length in a future Number, we shall here only give the Table of Contents, and strongly recommend the work to every architect, or person in any way connected with the heating of houses by hot water.

Contents. Introduction. Chapter I. On the cause of circulation of water, and its consequences. Chap. II. On the application of the principles. Chap. III. On the proportionate sizes of various parts of the apparatus. Chap. IV. On permanence of temperature, depending on the form and size of the boiler and pipes. Chap. V. On the size and construction of furnaces. Chap. VI. On the laws of heat. Chap. VII. Experiments on cooling. Chap. VIII. On the application of the laws of heat, to determine the proper size of an apparatus for heating any description of building. Chap. IX. On peculiar modifications of the hot-water apparatus. Chap. X. General application and summary. Chap. XI. On ventilation. Chap. XII. On the various methods used for distributing artificial heat. Tables, &c. Index.

ART. IV. *Catalogue of Works on Architecture, Building, and Furnishing, and on the Arts more immediately connected therewith, recently published.*

HOPPER versus Cust, on the subject of rebuilding the new Houses of Parliament. 8vo, pp. 36.

We recommend this pamphlet to all those who take an interest in the controversy to which it alludes.

An Address to the "Leading Men of Manchester," suggested by a Letter on establishing a School of Design. By R. B. Haydon, Esq. *Inserted in the Manchester Guardian of Sept.* 17. 1837, by J. W. Hance. *Reprinted from the Manchester Courier, with considerable Additions.* Pamph. 8vo, pp. 22.

This is a spirited pamphlet, highly creditable to all concerned.

ART. V. *Literary Notice.*

ARCHITECTURAL Illustrations of the Temple Church, London, drawn and engraved by Robert William Billings, Associate of the Institute of British Architects, will shortly appear.

THIS work will contain thirty-one engravings, principally in outline, embracing plans, elevations, sections, details, and perspective views of this interesting church; also a short historical and descriptive account. Most of the eminent London architects have already sent their names to the subscription list.

MISCELLANEOUS INTELLIGENCE.

ART. I. *Foreign Notices.*

FRANCE.

PAVING with Asphaltum. — They are laying down a new style of *trottoir*, or foot-pavement, in Paris, which seems to answer very well; and would make capital flooring for large buildings, because it is easily susceptible of embel-

lishment in the mosaic manner. The ground, having been leveled, is covered with about 3 in. of concrete, again leveled, and covered with a sort of black pebble jam, being a mixture of pebbles (gravel), about the size of currants, boiled in pitch, and laid on hot; and then smoothed, and powdered with fine sand. It makes a beautiful, hard, firm, and level pavement; and it only remains to see how it will last. It is not dear; because, when they break up the old stuff, they have only to remelt it, and it does again. (*Extract of a letter dated Paris, Nov.* 10. 1837. *Communicated by G. B. W., Dec.* 1. 1837.)

NORTH AMERICA.

New Stove for Carriages. — An individual in Washington has invented a new kind of stove for heating the interior of carriages, which is said to be of great utility. The stove occupies very little room, consumes a small quantity of fuel, and produces no smoke. It has been used in many of the railway carriages in the United States. (*L'E'cho*, &c., Nov. 8. 1837.) See the account of Joyce's self-consuming stove, in *Gard. Mag.*, Jan. 1838, p. 47.

Art. II. *Domestic Notices.*

ENGLAND.

Lancashire. — *Manchester, Nov.* 13. 1837. — You will be glad to hear that there is some prospect of our having a school of design here before long, and that a better feeling for art generally is gradually developing itself in this quarter of the world. An individual (Mr. George Jackson) has lately delivered two lectures on the subject at the Mechanics' Institution here; and, still later, Mr. Hance delivered two lectures at the Athenæum: one on the advantages of cultivating a taste for the fine arts; and the other, on establishing a school of design in Manchester. I am happy to say they were well received, and, I trust, will serve to draw attention to so important a subject.

The Royal and Mechanics' Institutions are both bestirring themselves in the matter; but I am afraid that their respective plans will contemplate an union of the proposed establishment with their own Institutions, and I am decidedly of the opinion of Mr. Haydon, that it should stand by itself, free from, and unshackled by, the government of any other institution, and "be *exclusively* devoted to art and manufactures."

I am also happy to say that the Manchester Architectural Society is in a most flourishing condition. James Heywood, Esq., president of the Athenæum, has just sent us his ten-guinea fee for admission as honorary member; and several of the most influential and talented individuals have joined us (both in and out of the profession). Charles Barry, Esq., is an honorary member. We have above forty members already, and several are proposed at every meeting. I do not know whether you know anything of the rise and progress of this Society. In February last, Mr. Hance sent a letter to the principal offices in the town, inviting the young men in them to join in the formation of a society for mutual improvement and advancement in public taste in architecture. We called a general meeting for a certain evening, at eight o'clock: at half past, there were just five persons present. We began to despair; however, in another quarter of a hour, or so, we mustered nearly twenty, who were unanimous in the resolution of forming a Society; and so it *was* formed, and has hitherto outdone our most anxious expectations. The Society has just taken a large house in Mosley Street, and fitted up some handsome rooms. You will, no doubt, have perceived, from the copy of rules I sent you some time back, that we have a general meeting once a month, at which a paper is read. These are very interesting meetings, and afford the members much gratification, and, I trust, improvement. In addition to these, we have a *conversazione* every three months, in order to excite a love of the art among the inhabitants, who are admitted freely. These meetings are always well attended, and have attracted much

notice. We intend opening our new rooms on the first Wednesday in December, with a splendid *conversazione;* and, after we are settled, we purpose having courses of lectures on subjects connected with architecture, in all its various departments. We shall also have a drawing school, for the study of casts and antique models, of which we shall soon have a very good collection. We have already established a library of the best works on art, which circulate among the members; and, as they are freely read, I hope, ere long, we shall see a decided improvement in professional taste; for, *entre nous*, the generality of the so-called professions are sunk in the lowest depths of barbarism. You may assure any of the members of the Institute of British Architects, who may be visiting this part, of every attention in our power to bestow, to render a visit agreeable, and, I trust, profitable; as I think Mr. Godwin will allow that we have something worthy of notice here.

Mr. Heigham has been delivering four lectures at the Atheneum, upon the History of Architecture; and is now repeating them at the Mechanics' Institution. Altogether, I think there is a decided improvement in the public feeling for the art. Arthur Parsey will shortly deliver some lectures on perspective here (at the Mechanics' Institution). I look forward with much curiosity to hear him, as he seems to have very unique notions on the subject. It appears to me, from what little I know of his theory, that, if not absurd, it is at least impracticable or useless in practice. However, I shall be able to form a more correct opinion when he has explained it himself. Mr. Haydon will likewise be down here shortly, to give us some more lectures, and rub up our ideas with respect to the school of design. The general state of business in our profession is somewhat flat at present, and has been so all the year. Mr. Lane is erecting some good houses in the Victoria Park, which will really be a great ornament; and we expect shortly to commence a church there, of which Mr. Hance is at present making the drawings: it will, I believe, be a handsome Gothic structure, in the perpendicular style, with a spire. Mr. Atkinson is erecting a beautiful bit (quite a gem) at Cheetham Hill: a Gothic church, likewise perpendicular, and having also a spire, highly enriched: *detail* excellent. It is much admired, and will increase his fame much, and, likewise, the general taste. A few such examples, and we should have nothing to fear. Mr. Tattersall is likewise giving us a specimen of his taste in the Union Bank, Mosley Street: a handsome Corinthian front, with engaged columns, on a rustic basement; with projecting balconies to the windows, the effect of which I do not like: they crowd it too much; and the basement, also, is too light, and the rustics not near deep enough cut. It is, however, a very creditable affair. The Commissioners of Highways have, I understand, been finding fault, in their wisdom, with the bold projection of the cornice: they had better keep their eyes on the ground, and clear away all obstructions there. Our exhibition will close on Saturday next: it has not been a very good one. A few first-rate pictures there certainly are, by Etty, Cooper, Landseer, &c.; but the generality very indifferent. I do not know how it is, but Liverpool generally outshines us. I suppose there is more chance of selling pictures there, or, perhaps, the hanging is more judicious: here it is *horrible*. I am credibly informed that the hanging this year was left to one of the porters of a celebrated print-seller, who has *fourteen shillings* a week for carrying out pictures, &c.: a *very efficient hand*, no doubt. If my authority were not good, I could not believe it. I see that Welby Pugin has been undergoing some severe lashing. His *Contrasts* are certainly rather too bad; and yet I think they will have good effect; at least, in directing observation to modern barbarisms, and inducing people to compare different works. His square style just suits more than one building of much pretension here. He is, perhaps, too enthusiastic, and somewhat illiberal in his opinions: but that is better than being lukewarm, and having no feelings at all. I like that article in your last Magazine, "On the Poetry of Architecture," much. For my part, I think those essays the best portion of the work. Mr. Barry is making a beautiful thing of our Athenæum. I suppose you know that it is in his best Italian style: it will be a fine con-

trast to his Royal Institution, with which it is in almost juxtaposition. He is also erecting a beautiful Gothic chapel for the Unitarians, in Upper Brook Street, Charlton, which is expected to rival his church of Saint Matthew, the spire of which is the most elegant I ever saw. — *J. W. H.*

Art. III. *Institute of British Architects.*

July 24. 1837. — P. F. Robinson, V.P., in the chair.

Elected. The Most Noble the Marquess of Lansdowne, and His Grace the Duke of Sutherland, as Honorary Fellows.

Presented. Two pamphlets, describing a new Method of covering Roofs, lately invented in Prussia. The Vienna Journal of Architecture and Engineering. White's Western Improvements. Library Catalogue of the Institution of Civil Engineers. An Engraving of Manby's Apparatus for Warming and Ventilating Buildings. Three Fragments from Worcester Cathedral. An Impression of a Medal representing the Place de Bordeaux, and Statue erected to the memory of Louis XV.

Read. A communication from S. J. Har, on the recent Discoveries in the ancient Theatre of Catania. A paper by M. Cheverton, on Mechanical Sculpture. The Report of the Committee appointed to examine the Elgin Marbles, and to report whether any Traces of polychromatic Embellishments are to be found on them. A paper on the Employment of Painting on the funeral Monuments of the Greeks.

This meeting was the last for the session of 1836–7.

Dec. 4. 1837. The first ordinary meeting for the session, 1837–8. J. B. Papworth, V.P., in the chair.

The president announced that her Majesty had consented to become the patroness of the Institution.

Elected. J. Medland, Architect, Gloucester, as Associate.

Presented. A View of Wells Cathedral. Civil Engineer, Nos. 1. to 3. Edwards on the Napoleon Medals. Minutes of the Proceedings of the Institution of Civil Engineers. View of the Chancel of the Church of Stratford upon Avon. View of the proposed Pier and Improvements at Northfleet. A Volume of 93 original drawings by Panini, Bibiena, Oppenord, Benvenuto Cellini, and other celebrated artists.

Read. Part I. of the History of the English School of Gothic Architecture, by J. Blore, Associate. A paper by the Chevalier Von Klenze, on a peripteral Ionic Temple erected by him in the Park at Munich, and decorated with polychromatic Embellishment.

Exhibited. A model of Bunnett and Corpe's Patent Revolving Safety Shutters.

Art. IV. *Obituary.*

John Linnell Bond, Esq. — It is with extreme regret that we announce the death of this highly gifted artist and truly admirable man, who expired at his house in Newman Street, on Sunday last, after many months of great bodily weakness. As an architect, he was, in knowledge, judgment, and taste, inferior to none of his contemporaries. For examples, we may refer to his design for Waterloo Bridge, justly considered one of the finest ornaments of the metropolis, which, with all the necessary estimates, was made by him for the projector, the late Mr. George Dodd, engineer; the principal inn at Stamford, executed for Sir Gerard Noel, and many other designs prepared for the same honourable baronet, which were never carried into effect; and others of a high character, now in possession of his brother, Mr. William Bond. Mr. Bond was well versed in classical literature. (*Literary Gazette*, Nov. 11. 1837.)